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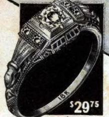

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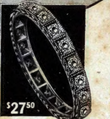

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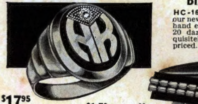

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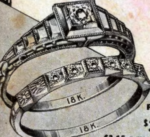

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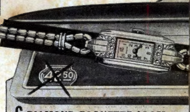

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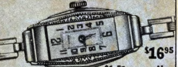

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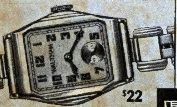

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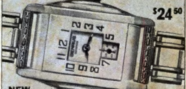

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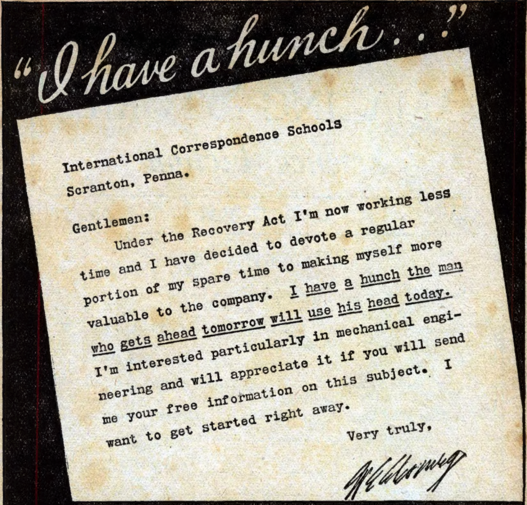

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AMAZING STORIES
Science Fiction

Vol. 8 MARCH, 1934 No. 11

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Our Cover

depicts a scene from the story entitled "Triplanetary,"
by Dr. E. E. Smith; drawn by Morey.

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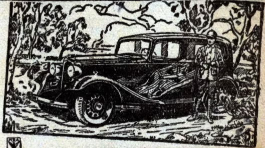

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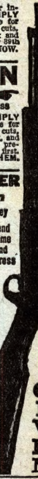

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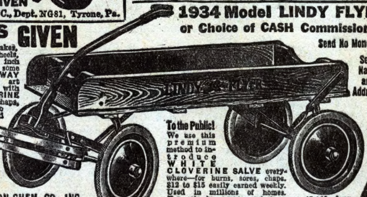

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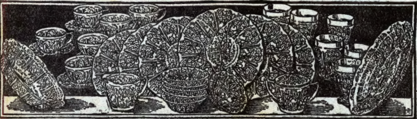

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SIXTH—That this dynamic Power is NOT TO BE FOUND "within," but has its source in a far different direction.

SEVENTH—THAT THE WORDS OF THIS GALILEAN CARPENTER WENT A THOUSAND MILES OVER THE HEADS OF HIS HEARERS 2,000 YEARS AGO, AND ARE STILL A THOUSAND MILES OVER THE HEADS OF THOSE WHO PROFESS TO FOLLOW HIM TODAY.

EIGHTH—That this same MIGHTY, INVISIBLE, PULSATING, THROBBING POWER can be used by anyone—AT ANY HOUR OF THE DAY OR NIGHT and without such methods as "going into a silence" or "gazing at bright objects," etc.

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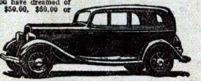

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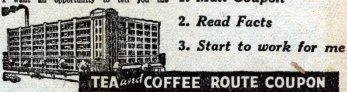

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MARCH, 1934
No. 11

T. O'CONOR SLOANE, Ph.D., *Editor*
Editorial and General Offices: 222 West 39th Street, New York, N. Y.

Extravagant Fiction Today . . . . . Cold Fact Tomorrow

Progress in Material Economy in the Future

By T. O'Conor Sloane, Ph.D.

THERE is a very unjust appraisal that is often bestowed on work in pure science, which seems to the criticizing spirit to be quite useless. It is expressed in the query so often applied to an investigator's work—"What is the use?" If the operation of scientific investigators was limited to subjects that on their face bore the marks of usefulness, and if all purely theoretical subjects were rejected as topics unworthy of study, the world would suffer in its progress and would be poor to-day.

Early in the last century it was discovered that a magnetized steel needle, poised upon a pointed support at its center, so as to be free to rotate in a horizontal plane, would be affected and caused to turn on its support, if a wire carrying a current of electricity were brought near it and more or less in parallel with it. This seems to be a very insignificant phenomenon, but it showed the action of force through space and the scientific world of those days was enlightened enough to realize the wonder of it. Faraday followed it up and by further developments made the compass needle do remarkable things without any material contact with the wire carrying the current which moved it.

Magnetism had been known for generations. The attraction exercised by a bit of amber on bits of straw, when the amber had been rubbed by an animal fabric, such as silk or woolen cloth, was a story of antiquity. When the new science of electricity was recognized, its name was taken from the Greek word for amber, *elektron*. But what did it all amount to? What was the use of such trivial experiments?

But fortunately the students of the budding science did not stop to think about the usefulness of following up the experiments of Amperes and Faraday. The experiments were utterly trivial in what they did, and in what they showed to the observer, but what they were to lead up to, and what were the developments impending in the next eight or ten decades were far from trivial. We now take the developments for granted. We do not trouble ourselves to wonder at them—but what seemed a silly affair to the many practical, utilitarian minds of the first decades of the last century has completely revolutionized human industry. Fortunately all the minds were not utilitarian; progress went on in spite of the discouraging spirit we speak of. The changes brought about by what so many must have thought was a silly experiment, and all these developments occurring during the last seventy-five years, exceed the progress of the preceding centuries of the reign of mankind on earth.

Place yourself in imagination in a great power plant by the side of a giant dynamo. It is a huge affair. The field is one of the most massive metallic constructions made by man. Its weight may be expressed in tons. The armature contains a massive core of thin iron sheets and is wound with a great mass of copper wire. The rotor, it may be the armature, is kept turning at great speed and all is so perfectly balanced and runs so quietly that realization of all that is going on is not easy.

What is going on is this: following out Ampere's and Faraday's "trivial" experiments, thousands of horsepower are flowing out of the dynamo—lighting innumerable lamps of high candle power. No one is content as we were a few decades ago to read by the light of one candle, a fifty candle power electric light is wanted now. Or the horsepower may be used to drive trains of cars, loaded up to "standing room only" and ten or more heavy cars going over hundreds of miles at sixty miles an hour as their ordinary rate of speed. Machinery of all kinds may be driven by our dynamo from the housewife's sewing machine to a ten thousand horsepower motor.

Now we see the futility of the question "What is the use?" Place alongside the great machine a cell of a wet battery, perhaps of a quart or a half quart size, connect its poles with two or three feet of wire and with a pocket compass observe the effect of the current on the poised needle. Your experiment seems utterly insignificant and one which could never have been of serious interest. The compass needle is caused to move without contact with the battery or its wire. Yet it is on that experiment, carried out in its first sequences by Faraday, that the dynamo and the world of electric power development is based. The little battery and pocket compass represent what is going on in the giant dynamo. The contrast is impressive.

A striking effect and a permanent one has been produced on the human mind by the development of great and impressive things from apparently insignificant experiments and small beginnings.

People are now ready to believe that anything, no matter how extraordinary and unprecedented, may come to pass and may be done by man. One of our correspondents seemed indignant over the fact that we doubted the possibility of trips to the moon. Professor Simon Newcomb was alluded to as pronouncing flight in heavier-than-air machines to be an impossibility and something never to be accomplished by man. Perhaps it is the wiser course to avoid the responsibility of affirming things to be impossible. Man has done so much that there is no telling what the next hundred years may bring about.

Recently a number of experiments, some quite successful, have been carried out in the line of rocket propulsion. Quite wonderful results have been attained with this system. Its interest in great part lies in the fact, that as far as we know, only a reaction system, such as rocket propulsion, could operate in the vacuum of space. This is offset by the fact that in space where there is practically no resistance to motion of the airplane, on account of the absence of air, a very slight power, almost infinitesimal, would actuate and drive it. Its wings would be useless, as would its propeller be if it had one. So in the rocket motor we have one first element of propulsion in a vacuum, supplemented by the fact that in a vacuum very small power would be needed for driving the plane, and little power to overcome the feeble gravitation in space.

Another line of experimentation attacks the atom and hope has been expressed that power may be derived from its breaking-up. But high authorities deny the possibility of the atom ever giving us power, economically at least. Much work is being done on it. It is an interesting thought that, as in Ampere's and Faraday's primitive work, lay the germ of the great dynamo of to-day, so from the apparently useless work of the leading experiments of our time, the little may develop into the great.

There has been a great advance in economy of light production. The candle and lamp and the old batswing and fishtail gas burners, as they were called in the technical nomenclature of the day, were supplanted by the incandescent Welsbach burner of greatly increased economy. In electric lighting, the carbon filament was replaced by the tungsten filament of three fold its economy. The steam engine as a prime motor is five or ten times more economical in coal consumption than were its predecessors, and some day we may see the internal combustion motor, with cheaper fuel than it now requires, displace the crude steam-engine. Even the automobile is very uneconomical and suggests the basis for great advance. Gasoline is expensive; to take care of lubrication the cylinders are cooled in the very face of economy, reducing the power based on the heat of combustion. Everywhere there seems to be room for endless economy if the change would only come.

One curious feature is that as economy of production increases, man wants more and more. So in the personal element is to be seen a great producer of waste and resistant of economy—there is a sort of race between the popular demand for more power and the engineer's efforts to keep the cost down.

The original condensing steam engine operated by injecting a jet of water into the interior of the cylinder after the piston had completed its power stroke. This jet condensed the steam into water and the piston went back to the other end of the cylinder. The cold water not only condensed the steam, but lowered the temperature of the metal sides of the cylinder and of the piston, so that when the time for the next power stroke came, the steam had to warm the metal, as well as to drive the piston through its stroke. This was very poor practise, because the heating of the cylinder and piston for every stroke expended a quantity of non-productive heat.

Then Watt made his great invention. A separate vessel was connected to the cylinder. This filled with steam as the piston moved through its work stroke. and the steam was constantly being condensed. A jet of water was driven into the subsidiary vessel, and the steam was instantly condensed without cooling the engine cylinder. The water as it collected from the condensed steam was pumped out of this vessel. Watt's invention was a most important one, as it kept the working cylinder hot.

In the modern gasoline and gas engines there is a sort of reversal from the modern condensing steam engine. The temperature in the cylinder is very high—injecting cold water would affect the combustion which is the source of its power and would interfere with the lubrication. So the cylinders are kept cool by outside refrigeration; it may be done by circulating water or it may be by air driven through jackets surrounding them. But this is precisely what cuts down efficiency. It reduces the power to a great extent, exactly as the internal water jet did in the earlier steam engines, but the wasteful cooling has to be in order to carry out the lubrication. As the cylinder of the internal combustion engine is directly cooled, its cycle of operation to that extent brings it nearer to the old condensing engine of the days before Watts. The cooling of the cylinders from considerations of economical production of power is fundamentally wrong. But it has to be done. Thus in the internal combustion engine such as the gas engine, we have a radically imperfect heat engine. Who will be the Watts of this engine and avoid its glaring uneconomical operation due to the cooling of the cylinder?

We would be greatly delighted if we all knew that the modern electric lamp with tungsten wire filament is nearly four times as efficient as the carbon filament lamp was. And it is this. But such may fairly be designated as a small advance. Light is really extremely cheap—it costs an approximation to nothing, but when produced by heat, there is a very large amount of power wasted in producing useless obscure heat radiations, for light is a very small part of the energy expended by a luminary. The figures of the pressure of light are inconceivably small. Jeans put it that a strong enough ray of light could throw a man down. But he goes on to state that a fifty horse-power search light, operating for a century, would give a push of about a twentieth of an ounce.

There is so much to be done in the way of improving the economy of our processes that no feelings of criticism should be expended on the experimenters and students in the realm of the little things of mechanics. The results may be great, and there is plenty of room ahead for their attainment.

Triplanetary

By EDWARD E. SMITH, Ph.D.

PART III

We are giving the third, and next to the last, installment of Dr. Smith's story. It bears all the marks of the writings of this author, who in his narration has kept thoroughly up to his standard. He has made himself a favorite with our readers and we are very glad to give so serious a production in our columns.

Illustrated by MOREY

What Has Gone Before:

CONWAY COSTIGAN, a Sector Chief of the Secret Service of Triplanetary—the government of the allied planets earth, Mars and Venus—is serving as First Officer of the interplanetary liner "Hyperion." The liner is attacked and crippled by an invisible ship, and is towed to the supposed pirates' base, an invisible planetoid. Roger, the owner and ruler of the structure, is a man of mystery.

Costigan, Captain Bradley of the "Hyperion" and Clio Marsden, Costigan's sweetheart, escape from the planetoid by the use of ultra-phones —Secret Service instruments whose use sets up no vibrations in the ether—only to be drawn through a peculiarly opaque fog of crimson energy into an outlandish space-ship. They are conscious, but are rendered helpless by a temporary paralysis of all voluntary muscles. Costigan has been in touch with Virgil Samms, the Chief of the Secret Service, and most of the Peace Fleet of Triplanetary has been ordered to concentrate upon the supposed location of the planetoid.

Aboard the "Chicago," one of the vessels of the fleet, is Lyman Cleveland, the beam expert, who is also a Secret Service operative. He locates the planetoid and the fleet attacks. The "Chicago" is ordered to withdraw from the action, so that Cleveland may take ultra-photographs of everything that happens. In the ensuing battle the robot-manned vessels of the "pirates" are defeated. The fleet is about to attack the planetoid when both fleet and planetoid are assailed by the same red radiance into which Costigan and his companions had been drawn.

The strangers have come from Nevia, the one planet of a sun many light-years distant from our own. Its atmosphere is red, its surface is almost entirely water. The Nevians are four-legged, four-armed, highly intelligent amphibians. They live in cities built upon the few islands and in shallow water; and are carrying on an endless war of mutual extermination with the fishes of the greater deeps.

The Nevians are able to transform iron into a viscous allotrope, and in that form to use its intra-atomic energy. Iron is extremely rare upon their planet, however; hence Nerado, a Nevian scientist, has designed and built two immense, fish-shaped space-cruisers, in one of which he sets out to explore the Galaxy in quest of iron. He finally finds it—in the material of the fighting ships and planetoid—and after taking Costigan, Clio and Bradley aboard his vessel as specimens, he converts all the iron of the fighting craft into the allotrope and stores it in his tanks. Then, after summoning the other Nevian space-ship, he returns to Nevia.

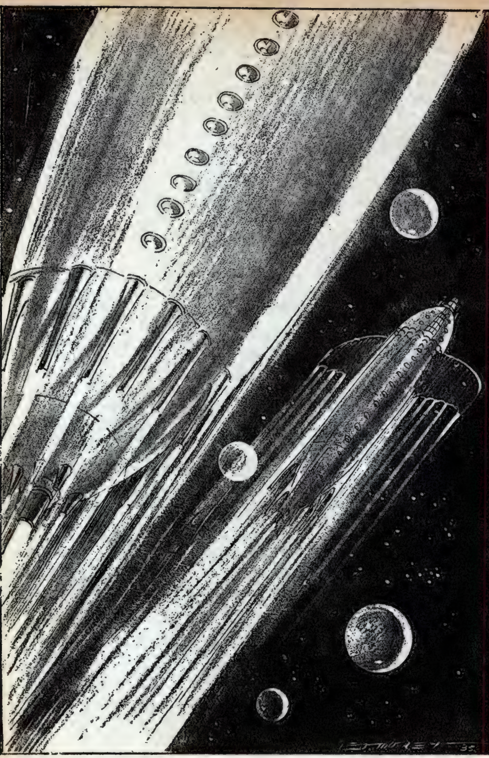
Upon arrival there, Nerado is called to the aid of a city which is being demolished by the fishes. During the battle the three captives escape from Nerado in one of his own life-boats and drive toward earth, hoping that the Nevian scientist-captain will be so fully occupied that he will not pursue them.

The story now turns back to the camera-ship "Chicago," in which Cleveland is recording the terrific battle in space between Nerado's cruiser upon one side and Triplanetarians and "pirates" upon the other.

CHAPTER VII

The Hill

THE heavy cruiser "Chicago" hung motionless in space, thousands of miles distant from the warring fleets of space-ships so viciously attacking and so stubbornly defending the planetoid of the enemy. In the cap-



Its atmosphere was withdrawn, the outer door opened, and he glanced across a bare hundred feet of space at the rocket-plane which, keel ports fiercely aflame, was braking her terrific speed to match the slower pace of the gigantic ship of war.

tain's sanctum Lyman Cleveland crouched tensely above his ultra-cameras, his sensitive fingers touching lightly their micrometric dials. His body was rigid, his face was set and drawn. Only his eyes moved; flashing back and forth between the observation plates and smoothly-running rolls which were feeding into the cameras the hardened steel tapes upon which were being magnetically recorded the frightful scenes of carnage and destruction there revealed.

Silent and bitterly absorbed, though surrounded by staring officers, whose fervent, almost unconscious cursing was prayerful in its intensity, the visiray expert kept his ultra-instruments upon that awful struggle to its dire conclusion. Flawlessly those instruments noted every detail of the destruction of Roger's fleet, of the transformation of the armada of Triplanetary into an unknown fluid, and finally of the dissolution of the gigantic planetoid itself. Then furiously Cleveland drove his beams against the crimsonly opaque obscurity into which the peculiar, viscous stream of substance was disappearing. Time after time he applied his every watt of power, with no result. A vast volume of space, roughly ellipsodial in shape, was closed to him by forces entirely beyond his experience or comprehension. But suddenly, while his rays were still trying to pierce that impenetrable murk, it disappeared instantly and, without warning, the illimitable infinity of space once more lay revealed upon his plates and his beams flashed on and on through the void, unimpeded.

"Back to Tellus, sir?" The "Chicago's" captain broke the strained silence.

"I wouldn't say so, if I had the say." Cleveland, baffled and frustrate, straightened up and shut off his cameras. "We should report back as soon as possible, of course, but there seems to be a lot of wreckage out there yet, that we can't photograph in detail at this distance. A close study of it might help us a lot in understanding what they did and how they did it. I'd say that we should get close-ups of whatever is left, and do it right away, before it gets scattered all over space; but of course I can't give you orders."

"You can, though," the captain made surprising answer. "My orders are that you are in command of this vessel."

"In that case we will proceed at full emergency acceleration to investigate the wreckage," Cleveland replied, and the cruiser—sole survivor of Triplanetary's supposedly invincible force—shot away with every projector delivering its maximum blast.

As the scene of the disaster was approached there was revealed upon the plates a confused mass of débris; a mass whose individual units were apparently moving at random; yet which was as a whole still following the orbit of Roger's planetoid. Space was full of machine parts, structural members, furniture, flotsam of all kinds; and everywhere were the bodies of men. Some were encased in space-suits, and it was to these that the rescuers turned first—space-hardened veterans though the men of the "Chicago" were, they did not care even to look at the others. Strangely enough, however, not one of the floating figures spoke or moved, and space-line men were hurriedly sent out to investigate.

"All dead." Quickly the dread report came back. "Been dead a long time. The armor is all stripped off the suits, and the generators and the other apparatus are all shot. Something funny about it, too—none of them seem to have been touched, but the machinery of the suits seems to be about half of it missing."

"I've got it all on the spools, sir." Cleveland, his close-up survey of the wreckage finished, turned to the captain. "What they've just reported checks up with what I've photographed everywhere. I've got an idea of what might have happened, but it's so dizzy that I'll have to have a lot of reenforcement before I'll believe it myself. But you might have them bring in a few of the armored bodies, a couple of those switchboards and panels floating around out there, and half a dozen miscellaneous pieces of junk—the nearest things they get hold of, whatever they happen to be."

"Then back to Tellus at maximum?"

"Right—back to Tellus, as fast as we can possibly go there."

WHILE the "Chicago" hurtled through space at full power, Cleveland and the ranking officers of the vessel grouped themselves about the salvaged wreckage. Familiar with space-wrecks as were they all, none of them had ever seen anything like the material before them. For every part and instrument was weirdly and meaninglessly disintegrated. There were no breaks, no marks of violence, and yet nothing was intact. Bolt-holes stared empty, cores, shielding cases and needles had disappeared, the vital parts of every instrument hung awry, disorganization reigned rampant and supreme.

"I never imagined such a mess," the captain said, after a long and silent study of the objects. "If you have any theory to cover *that,* Cleveland, I would like to hear it!"

"I want you to notice something first," the visiray expert replied. "But don't look for what's there—look for what *isn't* there."

"Well, the armor is gone. So are the shielding cases, shafts, spindles, the housings and stems . . ." The captain's voice died away as his eyes raced over the collection. "Why, everything that was made of wood, bakelite, copper, aluminum, silver, bronze, or anything but steel hasn't been touched, and every bit of steel is gone. But that doesn't make sense—what does it mean?"

"I don't know—yet," Cleveland replied, slowly. "But I'm afraid that there's more, and worse." He opened a space-suit reverently, revealing the face; a face calm and peaceful, but utterly, sickeningly white. Still reverently, he made a deep incision in the brawny neck, severing the jugular vein, then went on, soberly:

"You never imagined such a thing as *white* blood, either, but it all checks up. Someway, somehow, every particle—probably every atom—of free or combined iron in this whole volume of space was made off with."

"Huh? How come? And above all, *why?*" from the amazed and staring officers.

"You know as much as I do," grimly, ponderingly. "If it were not for the fact that there are solid asteroids of iron out beyond Mars, I would say that somebody wanted iron badly enough to wipe out the fleets and the planetoid to get it. But anyway, whoever they were, they carried enough power so that our armament didn't bother them at all. They simply took the metal they wanted and went away with it—so fast that I couldn't trace them with an ultra-beam. There's only one thing plain; but that's so plain that it scares me stiff. This whole affair spells intelligence, with a capital 'I,' and that intelligence is anything but friendly. As for me I want to get Fred Rodebush at work on this soon—think I'll hurry it up a little."

HE stepped over to his ultra-projector and called the Terrestrial headquarters of the T. S. S. Samms' face soon appeared upon his screen.

"We got it all, Virgil," he reported.

"It's something extraordinary—bigger, wider, and deeper than any of us dreamed. It may be urgent, too, so I think I had better shoot the pictures in on the ultra-wave and save a few days. Fred has a telemagneto recorder there that he can synchronize with this camera outfit easily enough. Right?"

"Right. Good work, Lyman—thanks," came back terse approval and appreciation, and soon the steel tapes were again flashing between the feed-rolls. This time, however, their varying magnetic charges were modulating an ultra-wave so that every detail of that calamitous battle of the void was being screened and recorded in the innermost private laboratory of the Triplanetary Secret Service.

Eager though he naturally was to join his fellow-scientists, Cleveland did not waste his time during the long, but uneventful journey back to earth. There was much to study, many improvements to be made in his comparatively crude first ultra-camera. Then, too, there were long conferences with Samms, and particularly with Rodebush, the mathematical physicist, whose was the task of solving the riddles of the energies and weapons of the Nevians. Thus it did not seem long before green Terra grew large beneath the flying sphere of the 'Chicago'.

"Going to have to circle at once, aren't you?" Cleveland asked the chief pilot. He had been watching that officer closely for minutes, admiring the delicacy and precision with which the great vessel was being maneuvered preliminary to entering the earth's atmosphere.

"Yes," the pilot replied. "We had to come in in the shortest possible time, and that meant a velocity here that we can't check without a spiral. However, even at that we saved a lot of time. You can save quite a bit more, though, by having a rocket-plane come out to meet us somewhere around fifteen or twenty thousand kilometers, depending upon where you want to land. With their power-to-mass ratio they can match our velocity and still make the drop direct."

"Guess I'll do that—thanks," and the operative called his chief, only to learn that his suggestion had already been acted upon.

"We beat you to it, Lyman," Samms smiled. "The 'Silver Sliver' is out there now, looping to match your course," acceleration, and velocity at twenty-two thousand kilometers. You'll be ready to transfer?"

"I'll be ready!" and the Quartermaster's ex-clerk went to his quarters and packed his dunnage-bag.

In due time the long, slender body of the rocket-plane came into view, creeping 'down' upon the space-ship from 'above,' and Cleveland bade his friends good-bye. Donning a space-suit, he stationed himself in the starboard airlock. Its atmosphere was withdrawn, the outer door opened, and he glanced across a bare hundred feet of space at the rocket-plane which, keel ports fiercely aflame, was braking her terrific speed to match the slower pace of the gigantic ship of war. Shaped like a toothpick, needle-pointed fore and aft, with ultra-stubby wings and vanes, with flush-set rocket ports everywhere, built of a lustrous silvery alloy of noble and almost infusible metals—such was the private speedboat of the chief of the T. S. S. The fastest thing known, whether in planetary air, the stratosphere, or the vacuus depth of interplanetary space, her first flashing trial spins had won her the nickname of the 'Silver Sliver.' She had had a more formal name, but that title had long since been buried in the Departmental files.

Lower and slower dropped the 'Silver Sliver,' her rockets flaming even brighter, until her slender length lay level with the airlock door. Then her blasting discharges subsided to the power necessary to match exactly the "Chicago's" deceleration.

"Ready to cut, 'Chicago!' Give me a three-second call!" snapped from the pilot room of the 'Sliver'.

"Ready to cut!" the pilot of the 'Chicago' replied. Seconds! Three! Two! One! CUT!"

At the last word the power of both vessels was instantly cut off and everything in them became weightless. In the tiny airlock of the slender craft crouched a space-line man with coiled cable in readiness, but he was not needed. As the flaring exhausts ceased Cleveland swung out his heavy bag and stepped lightly off into space, and in a right line he floated directly into the open doorway of the rocket-plane. The door clanged shut behind him and in a matter of moments he stood in the control room of the racer, divested of his armor and shaking hands with his friend and co-laborer, Frederick Rodebush.

"WELL, Fred, what do you know?" Cleveland asked, as soon as greetings had been exchanged. "How do the various reports dovetail together? I know that you couldn't tell me anything on the wave, but there's no danger of eavesdroppers *here*."

"You can't tell," Rodebush soberly replied. "We're just beginning to wake up to the fact that there are a lot of things we don't know anything about. Better wait until we're back at the Hill. We have a full set of ultra screens around there now. There's a couple of other good reasons, too—it would be better for both of us to go over the whole thing with Virgil, from the ground up; and we can't do any more talking, anyway. Our orders are to get back there at maximum, and you know what that means aboard the 'Sliver.' Strap yourself solid in that shock-absorber there, and here's a pair of ear-plugs."

"When the 'Sliver' really cuts loose it means a rough party, all right," Cleveland assented, snapping about his body the heavy spring-straps of his deeply cushioned seat, "but I'm just as anxious to get back to the Hill as anybody can be to get me there. All set."

Rodebush waved his hand at the pilot and the purring whisper of the exhausts changed instantly to a deafening, continuous explosion. The men were pressed deeply into their shock-absorbing chairs as the 'Silver Sliver' spun around her longitudinal axis and darted away from the 'Chicago' with such a tremendous acceleration that the spherical warship seemed to be standing still in space. In due time the calculated mid-point was reached, the slim space-plane rolled over again, and, mad acceleration now reversed, rushed on toward the earth, but with constantly diminishing speed. Finally a measurable atmospheric pressure was encountered, the needle prow dipped downward, and the 'Silver Sliver' shot forward upon her tiny wings and vanes, nose-rockets now drumming in staccato thunder. Her metal grew hot; dull red, bright red, yellow, blinding white; but it neither melted nor burned. The pilot's calculations had been sound, and though the limiting point of safety of temperature was reached and steadily held, it was not exceeded. As the density of the air increased so decreased the velocity of the man-made meteorite. So it was that a dazzling lance of fire sped high over Seattle, lower over Spokane, and hurled itself eastward, a furiously flaming arrow; slanting downward in a long, screaming dive toward the heart of the Rockies. As the now rapidly cooling greyhound of the skies passed over the western ranges of the Bitter Roots it became apparent that her goal was a vast, flat-topped, and conical mountain, shrouded in livid light; a mountain whose height awed even its stupendous neighbors.

While not artificial, the Hill had been altered markedly by the Triplanetary engineers who had built into it the headquarters of the Secret Service. Its mile-wide top was a jointless expanse of gray armor steel; the steep, smooth surface of the truncated cone was a continuation of the same immensely thick sheet of metal. No known vehicle could climb that smooth, hard, forbidding slope of steel; no known projectile could mar that armor; no known craft could even approach the Hill without detection. Could not approach it at all, in fact, for it was constantly inclosed in a vast hemisphere of lambent violet flame through which neither material substance nor destructive ray could pass.

As the 'Silver Sliver,' crawling along at a bare three-hundred miles an hour, approached that transparent, brilliantly violet wall of destruction, a violet light filled her control room and as suddenly went out; flashing on and off again and again.

"Giving us the once-over, eh?" Cleveland asked. "That is something new, isn't it, Fred?"

"Yes, it's a high-powered ultra-wave spy," Rodenbush returned. "The light is simply a warning, which can be carried if desired. It can also carry voice and vision. . . .

"LIKE this," Samms' voice interrupted from the powerful dynamic speaker upon the pilots' panel and his clear-cut face appeared upon the television screen. "I don't suppose Fred thought to mention it, but this is one of his inventions of the last few days. We are just trying it out on you. It doesn't mean a thing though, as far as the 'Sliver' is concerned. Come ahead!"

A circular opening appeared in the wall of force, an opening which disappeared as soon as the plane had darted through it; and at the same time her landing-cradle rose into the air through a great trap-door. Slowly and gracefully the space-plane settled downward into that cushioned embrace. Then cradle and nestled 'Sliver' sank from view and, turning smoothly upon mighty trunnions, the plug of armor drove solidly back into its place in the metal pavement of the mountain's lofty summit. The cradle-elevator dropped rapidly, coming to rest many levels down in the heart of the Hill, and Cleveland and Rodebush leaped lightly out of their transport, through her still hot outer walls. A door opened before them and they found themselves in a large room of full daylight illumination; the anteroom of the private office of Virgil Samms. Chiefs of Departments sat at their desks, concentrated upon problems or at ease, according to the demands of the moment; televisotypes and recorders flashed busily but silently; calmly efficient men and women went wontedly about the all-embracing business of Triplanetary's space-pervading Secret Service.

"Right of way, Norma?" Rodebush paused briefly before the desk of the Chief's private secretary; but even before he had spoken she had pressed a button and the door behind her swung wide.

"You two do not need to be announced," the attractive young woman smiled. "Go right in."

Samms met them at the door eagerly, shaking hands particularly vigorously with Cleveland.

"Congratulations on that camera, Lyman!" he exclaimed. "You did a wonderful piece of work on that. Help yourselves to smokes and sit down—there are a lot of things we want to talk over. Your pictures carried most of the story, but they would have left us pretty much as sea without Costigan's reports. But as it was, Fred here and his crew worked out most of the answers from the dope the two of you got; and what few they haven't got yet they soon will have."

"NOTHING new on Conway?" Cleveland was almost afraid to ask the question.

"No." A shadow came over Samms' face. "I'm afraid . . . but I'm hoping it's only that those creatures, whatever they are, have taken him so far away that he can't reach us."

"They certainly are so far away that we can't reach them," Rodenbush volunteered. "We can't even get their ultra-wave interference any more."

"Yes, that's a hopeful sign," Samms went on. "I hate to think of Conway Costigan checking out. There, fellows, was a real observer. He was the only man, I have ever known, who combined the two qualities of the perfect witness. He could actually see everything he looked at, and could report it truly, to the last, least detail. Take all this stuff, for instance; especially their ability to transform iron into a fluid allotrope, and in that form to use its intra-atomic energy as power. Something brand new—unheard of except in the ravings of imaginative fiction—and yet he described their converters and projectors so minutely that Fred was able to work out the underlying theory in three days, and to tie it in with our own super-ship. My first thought was that we'd have to rebuild it iron-free, but Fred showed me my error—you found it first yourself, of course."

"It wouldn't do any good to make the ship non-ferrous unless you could so change our blood chemistry that we could get along without hemoglobin, and that would be quite a feat," Cleveland agreed. "Then, too, our most vital electrical machinery is built around iron cores. No, we'll have to develop a screen for those forces—screens, rather, so powerful that they can't drive anything through them."

"We've been working along those lines ever since you reported," Rodebush said, "and we're beginning to see light. And in that same connection it's no wonder that we couldn't handle our super-ship. We had some good ideas, but they were wrongly applied. However, things look quite promising now. We have that transformation of iron all worked out in theory, and as soon as we get a generator going we can straighten out everything else in short order. And think what that unlimited power means! All the power we want—power enough even to try out such hitherto purely theoretical possibilities as the neutralization of gravity, and even of the inertia of matter!"

"Hold on!" protested Samms. "You certainly can't do *that!* Inertia is—*must* be—a basic attribute of matter, and surely cannot be done away with without destroying the matter itself. Don't start anything like that, Fred—I don't want to lose you and Lyman, too."

"Don't worry about us, Chief," Rodebush replied with a smile. "If you will tell me what matter is, fundamentally, I may agree with you . . . No? Well, then, don't be surprised at anything that happens. We are going to do a lot of things that nobody ever thought of doing before."

Thus for a long time the argument and discussion went on, to be interrupted by the voice of the secretary.

"Sorry to disturb you, Mr. Samms, but some things have come up that you will have to handle. Knobos is calling from out near Mars. He has caught the 'Endymion,' and has killed about half her crew doing it. Milton has finally reported from Venus, after being out of touch for five days. He trailed the Wintons into Thalleron swamp. They crashed him there, but he won out and has what he went after. And just now I got a flash from Fletcher, in the asteroid belt. I think that he has finally traced that dope line. But Knobus is on now—what do you want him to do about the 'Endymion'?"

"Tell him to—no, put him on here, I'd better tell him myself," Samms directed, and his face hardened in ruthless decision as the horny, misshapen face of the Martian lieutenant appeared upon the screen. "What do you think, Knobos? Shall they come to trial or not?"

"No."

"I don't think so, either. It is better that a few gangsters should disappear in space than run the risk of another uprising. See to it."

"Right." The screen darkened and Samms spoke to his secretary. "Put Milton and Fletcher on whenever their rays come in." He then turned to his guests. "We've covered the ground quite thoroughly. Goodbye—I wish I could go with you, but I'll be pretty well tied up for the next week or two."

"TIED up, doesn't half express it," Rodebush remarked as the two scientists walked along a corridor toward an elevator. "He probably is the busiest man on the three planets."

"As well as the most powerful," Cleveland supplemented. "And very few men could use his power as fairly—but he's welcome to it, as far as I'm concerned. I'd have the pink fantods for a month if I had to do only once what he's just done—and to him it's just part of a day's work."

"You mean the 'Endymion?' What else could he do?"

"Nothing—that's just what I'm talking about. It had to be done, since bringing them to trial would probably mean killing half the people of Morseca; but at the same time it's a ghastly thing to have to order a job of deliberate, cold-blooded, and illegal murder."

"You're right, of course, but you would . . ." he broke off, unable to put his thoughts into words. For while inarticulate, manlike, concerning their deepest emotions, in both men was ingrained the code of their organization; both knew that to every man chosen for it *The Service* was everything, himself nothing.

"But enough of that, we'll have plenty of grief of our own right here," Rodebush changed the subject abruptly as they stepped into a vast room, almost filled by the immense bulk of the "Boise"—the sinister space-ship which, although never flown, had already lined with black so many pages of Triplanetary's roster. She was now, however, the center of a furious activity. Men swarmed over her and through her, in the orderly confusion of a fiercely driven but carefully planned program of reconstruction.

"I hope your dope is right, Fred!" Cleveland called, as the two scientists separated to go to their respective laboratories. "If it is, we'll make a perfect lady out of this unmanageable man-killer yet!"

CHAPTER VIII

The Super-Ship Is Launched

AFTER weeks of ceaseless work, during which was lavished upon her every resource of mind and material afforded by three planets, the 'Boise' was ready for her maiden flight. As nearly ready, that is, as the thought and labor of man could make her. Rodebush and Cleveland had finished their last rigid inspection of the craft and, standing beside the center door of the main airlock, were talking with their chief.

"You say that you think that it's safe, and yet you won't take a crew," Samms argued. "In that case it isn't safe enough for you men, either. We need you too badly to permit you to take such chances."

"You've *got* to let us go, because we are the only ones who are thoroughly familiar with her theory," Rodebush insisted. "I said, and still say, that I *think* it is safe. I can't prove it, however, except mathematically; because she's altogether too full of too many new and untried mechanisms, too many extrapolations beyond all existing or possible data. Theoretically, she is sound, but you know that theory can go only so far, and that mathematically negligible factors may become operative at those velocities. We do not need a crew for a short trip. We can take care of any minor mishaps, and if our fundamental theories are wrong, all the crews between here and Jupiter wouldn't do any good. Therefore we two are going—alone."

"Well, be very careful, anyway. Start out slow and take it easy."

"Start out slow? We can't! We can't neutralize half of gravity, nor half of the inertia of matter—it's got to be everything or nothing, as soon as the neutralizers go on. We could start out on the projectors, of course, instead of on the neutralizers, but that wouldn't prove anything and would only prolong the agony."

"Well, then, be as careful as you can."

"We'll do that, Chief," Cleveland put in. "We think a lot of us, and we aren't committing suicide just yet if we can help it. And remember about everybody staying inside when we take off—it's barely possible that we'll take up a lot of room. Good-bye to all of you."

"Good-bye, fellows!"

The massive insulating doors were shut, the metal side of the mountain opened, and huge, squat caterpillar tractors came roaring and clanking into the room. Chains and cables were made fast and, mighty steel rails groaning under the load, the space-ship upon her rolling ways was dragged out of the Hill and far out upon the level floor of the surface before the tractors cast off and returned to the fortress.

"Everybody is under cover," Samms informed Rodebush. The chief was staring intently into his plate, upon which was revealed the control room of the untried super-ship. He heard Rodebush speak to Cleveland; heard the observer's brief reply; saw the navigator throw his switches—then the communicator plate went blank. Not the ordinary blankness of a cut-off, but a peculiarly disquieting fading out into darkness. And where the great space-ship had rested there was for an instant nothing. Exactly nothing—a vacuum. Vessel, falsework, rollers, trucks, the enormous steel I-beams of the tracks, even the deep-set concrete piers and foundations and a vast hemisphere of the solid ground; all had disappeared utterly and instantaneously. But almost as suddenly as it had been formed the vacuum was filled by a cyclonic rush of air. There was a detonation as of a hundred vicious thunderclaps made one, and, through the howling, shrieking blasts of wind, there rained down upon the valley, plain, and metaled mountain a veritable avalanche of débris: bent, twisted, and broken rails and beams, splintered timbers, masses of concrete, and thousands of cubic yards of soil and rock. For inertia and gravitation had not been neutralized at precisely the same instant, and for a moment everything within the radius of action of the iron-driven gravity nullifiers of the "Boise" had continued its absolute motion with inertia unimpaired. Then, left behind immediately by the almost infinite velocity of the cruiser, all this material had again become subject to all of Nature's everyday laws and had crashed back to the ground.

"COULD you hold your beam, Randolph?" Samm's voice cut sharply through the daze of stupefaction which held spellbound most of the denizens of the Hill. But all were not so held—no conceivable emergency could take the attention of the chief ultra-wave operator from his instruments.

"No, sir," Radio Center shot back. "It faded out and I couldn't recover it. I put everything I've got behind a tracer on that beam, but haven't been able to lift a single needle off the pin."

"And no wreckage of the vessel itself," Samms went on, half audibly. "Either they have succeeded far beyond their wildest hopes or else . . . more probably. . . ." He fell silent and switched off the plate. Were his two friends, those intrepid scientists, alive and triumphant, or had they gone to lengthen the list of victims of that man-killing space-ship? Reason told him that they were gone. They *must be* gone, or else his ultra-beams—energies of such unthinkable velocity of propagation that man's most sensitive instruments had never been able even to estimate it—would have held the ship's transmitter in spite of any velocity attainable by any matter under any conceivable conditions. The ship must have been disintegrated as soon as Rodebush released his forces. And yet, had not the physicist dimly foreseen the possibility of such an actual velocity—or had he? However, individuals could came and could go, but Triplanetary went on. Samms squared his shoulders unconsciously, and slowly, grimly, made his way back to his private office.

He had scant time to mourn. Scarcely had he seated himself at his desk when an emergency call came snapping in; a call of such import that his secretary's usually calm voice trembled as she put it on his plate.

"Commissioner Hinkle is calling, sir," she announced. "Something terrible is going on again, out toward Orion. Here he is," and there appeared upon the screen the face of the Commissioner of Public Safety, the commander of Triplanetary's every armed force—whether of land or of water, of air or of empty space.

"They've come back, Samms!" the Commissioner rapped out, without preliminary or greeting. "Four vessels gone—a freighter and a passenger liner, with her escort of two heavy cruisers. All in Sector M; Dx about 151. I have ordered all traffic out of space for the duration of the emergency, and since even our warships seem useless, every ship is making for the nearest dock at maximum. How about that new flyer of yours—got anything that will do us any good? No one beyond the "Hill's" shielding screens knew that the "Boise" had already been launched.

"I don't know. We don't even know whether we have a super-ship or not," and Samms described briefly the beginning—and very probably the ending—of the trial flight, concluding: "It looks bad, but if there was any possible way of handling her, Rodebush and Cleveland did it. All our tracers are negative yet, so nothing definite has . . . "

He broke off as a frantic call came in from the Pittsburgh station for the Commissioner, a call which Samms both heard and saw.

"The city is being attacked!" came the urgent message. "We need all the reinforcements you can send us!" and a picture of the beleaguered city appeared in ghastly detail upon the screens of the observers; a view being recorded from the air. It required only seconds for the commissioner to order every available man and engine of war to the seat of conflict; then, having done everything they could, Hinkle and Samms stared in helpless, fascinated horror into their plates, watching the scenes of carnage and destruction depicted there.

THE Nevian vessel—the sister-ship, the craft which Costigan had seen in mid-space as it hurtled earthward in response to Nerado's summons—hung poised in full visibility, high above the metropolis. Scornful of the pitiful weapons wielded by man she hung there, her sinister beauty of line sharply defined against the cloudless sky. From her shining hull there reached down a tenuous but rigid rod of crimson energy; a rod which slowly swept hither and thither as the detectors of the amphibians searched out the richest deposits of the precious iron for which the inhuman visitors had come so far. Iron, once solid, now a viscous red liquid, was sluggishly flowing in an ever-thickening stream up that intangible crimson duct and into the capacious storage tanks of the Nevian raider; and wherever that flaming beam went there went also ruin, destruction, and death. Office buildings, skyscrapers towering majestically in their architectural symmetry and beauty, collapsed into heaps of débris as their steel skeletons were abstracted. Deep into the ground the beam bored; flood, fire, and explosion following in its wake as the mazes of underground piping disappeared. And the humanity of the buildings died: instantaneously and painlessly, never knowing what struck them, as the life-bearing iron of their bodies went to swell the Nevian stream.

Pittsburgh's defenses had been feeble indeed. A few antiquated railway rifles had hurled their shells upward in futile defiance, and had been quietly absorbed. The district planes of Triplanetary, newly armed with iron-driven ultra-beams, had assembled hurriedly and had attacked the invader in formation, with but little more success. Under the impact of their beams the stranger's screens had flared white, then poised ship and flying squadron alike had been lost to view in a murkily opaque shroud of crimson flame. The cloud had soon dissolved, and from the place where the planes had been there had floated or crashed down a litter of non-ferrous wreckage. And now the cone of spaceships from the Buffalo base of Triplanetary was approaching Pittsburgh, hurling itself toward the Nevian plunderer and toward known, gruesome and hopeless defeat.

"Stop them, Hinkle!" Samms cried. "It's sheer slaughter! They haven't got a thing—they aren't even equipped yet with the iron drive!"

"I know it," the commissioner groaned, "and Admiral Barnes knows it as well as we do, but it can't be helped—wait a minute! The Washington cone is reporting. They're as close as the other, and they have the new armament. Philadelphia is close behind, and so is New York. Now perhaps we can do something!"

THE Buffalo flotilla slowed and stopped, and in a matter of minutes the detachments from the other bases arrived. The cone was formed and, iron-driven vessels in the van, the old-type craft far in the rear, it bore down upon the Nevian, vomiting from its hollow front a solid cylinder of annihilation. Once more the screens of the Nevian flared into brilliance, once more the red cloud of destruction was flung abroad. But these vessels were not entirely defenseless. Their iron-driven ultra-generators threw out screens of the Nevians' own formulæ, screens of prodigious power to which the energies of the amphibians clung and at which they clawed and tore in baffled, wildly coruscant displays of power unthinkable. For minutes the furious conflict raged, while the inconceivable energy being dissipated by those straining screens hurled itself in terribly destructive bolts of lightning upon the city far beneath.

No battle of such incredible violence could long endure. Triplanetary's ships were already exerting their utmost power, while the Nevians, contemptuous of Solarian science, had not yet uncovered their full strength. Thus the last desperate effort of mankind was proved futile as the invaders forced their beams deeper and deeper into the overloaded, defensive screens of the war-vessels; and one by one the supposedly invincible space-ships of humanity dropped in horribly dismembered wreckage upon the ruins of what had once been Pittsburgh.

CHAPTER IX

Specimens

ONLY too well founded was Costigan's conviction that the submarine of the deep-sea fishes had not been able to prevail against Nerado's formidable engines of destruction. For days the Nevian lifeboat with its three Terrestrial passengers hurtled through the interstellar void without incident, but finally the operative's fears were realized —his far-flung detector screens reacted; upon his observation plate lay revealed Nerado's mammoth space-ship, in full pursuit of its fleeing life-boat!

"On your toes, folks—it won't be long now!" Costigan called, and Bradley and Clio hurried into the tiny control room. Armor donned and tested, the three Terrestrials stared into the observation plates, watching the rapidly enlarging pictures of the Nevian space-ship. Nerado had traced them and was following them, and such was the power of the great vessel that the nearly inconceivable velocity of the lifeboat was the veriest crawl in comparison to that of the pursuing cruiser.

"And we've hardly started to cover the distance back to Tellus. Of course you couldn't get in touch with anybody yet?" Bradley stated, rather than asked.

"I kept on trying until they blanketed my wave, but all negative. Thousands of times too far for my transmitter. Our only hope of reaching anybody was the mighty slim chance that our super-ship might be prowling around out here already, but it isn't, of course. Here they are!"

Reaching out to the control panel, Costigan shot out against the great vessel wave after wave of lethal vibrations, under whose fiercely clinging impacts the Nevian defensive screens flared white; but, strangely enough, their own screens did not radiate. As if contemptuous of any weapons the lifeboat might wield, the mother ship simply defended herself from the attacking beams, in much the same fashion as a wildcat mother wards off the claws and teeth of her spitting, snarling kitten who is resenting a touch of needed maternal discipline.

"They probably won't fight us, at that," Clio first understood the situation. "This is their own lifeboat, and they want us alive, you know."

"There's one more thing we can try—hang on!" Costigan snapped, as he released his screens and threw all his power into one enormous pressor beam.

The three were thrown to the floor and held there by an awful weight, as if the lifeboat darted away at the stupendous acceleration of the beam's reaction against the unimaginable mass of the Nevian sky-rover; but the flight was of short duration. Along that pressor beam there crept a dull rod of energy, which surrounded the fugitive shell and brought it slowly to a halt. Furiously then Costigan set and reset his controls, launching his every driving force and his every weapon, but no beam could penetrate that red murk, and the lifeboat remained motionless in space. No, not motionless—the red rod was shortening, drawing the truant craft back toward the launching port from which she had so hopefully emerged a few days before. Back and back it was drawn; Costigan's utmost efforts futile to affect by a hair's breadth its line of motion. Through the open port the boat slipped neatly, and as it came to a halt in its original position within the multi-layered skin of the monster, the prisoners heard the heavy doors clang shut behind them, one after another.

And then sheets of blue fire snapped and crackled all about the three suits of Triplanetary armor—the two large human figures and the small one were outlined starkly in blinding blue flame.

"THAT'S the first thing that has come off according to schedule." Costigan laughed, a short, fierce bark. "That is their paralyzing ray; we've got it stopped cold, and we've each got enough iron to hold it forever."

"But it looks as though the best we can do is to stalemate," Bradley argued. "Even if they can't paralyze us, we can't hurt them, and we are heading back for Nevia."

"I think Nerado will come in for a conference, and we'll be able to make terms of some kind. He must know what these Lewistons will do, and he knows that we'll get a chance to use them, some way or other, before he gets to us again," Costigan asserted confidently—but again he was wrong.

The door opened, and through it there waddled, rolled, or crawled a metal-clad monstrosity—a thing with wheels, legs, and writhing tentacles of jointed bronze; a thing possessed of defensive screens sufficiently powerful to absorb the full blast of the Triplanetary projectors without effort. Three brazen tentacles reached out through the ravening beams of the Lewistons, smashed them to bits, and wrapped themselves in unbreakable shackles about the armored forms of the three human beings. Through the door the machine or creature carried its helpless load, and out into and along a main corridor. And soon the three Terrestrials, without armor, without arms, and almost without clothing, were standing in the control room, again facing the calm and unmoved Nerado. To the surprise of the impetuous Costigan, the Nevian commander was entirely without rancor.

"The desire for freedom is perhaps common to all forms of animate life," he commented, through the transformer. "As I told you before, however, you are specimens to be studied by the College of Science, and you shall be so studied in spite of anything you may do. Resign yourselves to that."

"Well, say that we don't try to make any more trouble; that we co-operate in the examination and give you whatever information we can," Costigan suggested. "Then you will probably be willing to give us a ship and let us go back to our own world?"

"You will not be allowed to cause any more trouble," the amphibian declared, coldly. "Your co-operation will not be required. We will take from you whatever knowledge and information we wish. In all probability you will never be allowed to return to your own system, because as specimens you are too unique to lose. But enough of this idle chatter — take them back to their quarters!"

And back to their inter-communicating rooms the prisoners were led under heavy guard.

True to his word, Nerado made certain that they had no more opportunities to escape. All the way back to far-distant Nevia the space-ship sped, where at once, in manacles, the Terrestrials were taken to the College of Science, there to undergo the physical and psychical examinations which Nerado had promised them.

CLIO and Costigan learned that the Nevian scientist-captain had not erred in stating that their co-operation was neither needed nor desired. Furious but impotent, the human beings were studied in laboratory after laboratory by the coldly analytical, unfeeling scientists of Nevia, to whom they were nothing more nor less than specimens; and in full measure they came to know what it meant to play the part of an unknown, lowly organism in a biological research. They were photographed, externally and internally. Every bone, muscle, organ, vessel, and nerve was studied and charted. Every reflex and reaction was noted and discussed. Meters registered every impulse and recorders filmed every thought, every idea, and every sensation. Endlessly, day after day, the nerve-wracking torture went on, until the frantic subjects could bear no more. White-faced and shaking, Clio finally screamed wildly, hysterically, as she was being strapped down upon a laboratory bench; and at the sound Costigan's nerves, already at the breaking point, gave way in an outburst of Berserk fury.

The man's struggles and the girl's shrieks were alike futile, but the surprised Nevians, after a consultation, decided to give the specimens a vacation. To that end they were installed, together with their earthly belongings, in a three-roomed structure of transparent metal, floating in the large central lagoon of the city. There they were left undisturbed for a time—undisturbed, that is, except by the continuous gaze of the crowd of hundreds of amphibians which constantly surrounded the floating cottage.

"First we're bugs under a microscope," Bradley growled, "then we're goldfish in a bowl. I don't know that . . . "

He broke off as two of their jailers entered the room. Without a word into the transformers, they seized Bradley and the girl. As those tentacular arms stretched out toward Clio, Costigan leaped. A vain attempt. In midair the paralyzing ray of the Nevians touched him and he crashed heavily to the crystal floor; and from that floor he looked on in helpless, raging fury while his sweetheart and his captain were carried out of their prison and into a waiting submarine.

CHAPTER X

The 'Boise' Acts

BUT what of the super-ship? What happened after that inertialess, that terribly destructive take-off?

Doctor Frederick Rodebush sat at the control panel of Triplanetary's newly reconstructed space-ship, his hands grasping the gleaming, ebonite handles of two double-throw switches. Facing the unknown though the physicist was, yet he grinned whimsically at his friend.

"Something, whatever it is, is about to take place. The 'Boise' is taking off, under full neutralization. Ready for anything to happen, Cleve?"

"All ready—shoot!" Laconically. Cleveland also was constitutionally unable to voice his deeper sentiments in time of stress.

Rodebush flipped the switches clear

over in flashing arcs, and instantly over both men there came a sensation akin to a tremendously intensified vertigo; but a vertigo as far beyond the space-sickness of weightlessness, as that horrible sensation is beyond mere terrestrial dizziness. The pilot tried to reverse the switches he had just thrown, but his leaden hands utterly refused to obey the dictates of his reeling mind. His brain was a writhing, convulsive mass of torment indescribable; expanding, exploding, swelling out with an unendurable pressure against its confining skull. Fiery spirals, laced with streaming, darting lances of black and green, flamed inside his bursting eyeballs. The Universe spun and whirled in mad gyrations about him as he reeled drunkenly to his feet, staggering and sprawling. He fell. He realized that he was falling, yet he could not fall! Thrashing wildly, grotesquely in agony, he struggled madly and blindly across the room, directly toward the thick steel wall. The tip of one hair of his unruly thatch touched the wall, and the slim length of that single hair did not even bend as its slight strength brought to an instant halt the hundred-and-eighty-odd pounds of mass—mass now entirely without inertia—that was his body.

But finally the sheer brain power of the man began to triumph over his physical torture. By indomitable force of will he compelled his groping hands to seize a life-line, almost meaningless to his dazed intelligence; and through that nightmare incarnate of hellish torture he fought his way back to the control board. Hooking one leg around a standard, he made a seemingly enormous effort and drove the two switches back into their original positions; then fell flat upon the floor, weakly but in a wave of relief and thankfulness, as his racked body felt again the wonted phenomena of weight and of inertia. White, trembling, frankly and openly sick, the two men stared at each other in half-amazed joy.

"It worked." Cleveland smiled wanly as he recovered sufficiently to speak, then leaped to his feet. "Snap it up, Fred! We must be falling fast—we'll be wrecked when we hit!"

"We're not falling anywhere." Rodebush, foreboding in his eyes, walked over to the main observation plate and scanned the heavens. "However, it's not as bad as I was afraid it might be. I can still recognize a few of the constellations, even though they are all pretty badly distorted. That means that we can't be more than a couple of light-years or so away from the Solar System. Of course, since we had so little thrust on, practically all of our time and energy was spent in getting out of the atmosphere; but, even at that, it's a good thing that space isn't an absolutely perfect vacuum, or we would have been clear out of the Universe by this time."

"HUH? Impossible—where are we, anyway? Then we must be making mil . . . Oh, I see! Cleveland exclaimed in disjointed sentences as he also stared into the plate.

"Right. We aren't traveling at all, *now*," Rodebush replied. "We are perfectly stationary relative to Tellus, since we made the hop without inertia. We must have attained one hundred per cent neutralization, which we didn't quite expect, and therefore we must have stopped instantaneously when our inertia was restored. But it isn't *where* we are that's worrying me the most—we can fix our place in space accurately enough by a few observations—it's *when*."

"That's right, too. Say we're two light-years away. You think maybe we're two years older than we were ten minutes ago, then? That's possible, of course, maybe probable: there's been a lot of discussion on that theory. Now's a good time to prove or to disprove it. Let's snap back to Tellus and find out."

"We'll do that, after a little more experimenting. You see, I had no intention of giving us such a long push. I was going to throw the switches over and back, but you know what happened. However, there's one good thing about it—it's worth two years of anybody's life to settle that relativity-time thing definitely, one way or the other."

"I'll say it is. But say, we've got a lot of power on our ultra-wave: enough to reach Tellus, I think. Let's locate the sun and get in touch with Samms."

"Let's work on these controls a little first, so we'll have something to report. Out here's a fine place to try the ship out—nothing in the way."

"All right with me. But I *would* like to find out whether I'm two years older than I think I am or not!"

Then for hours they put the great super-ship through her paces, just as test-pilots check up on every detail of performance of an airplane of new and radical design. They found that the horrible vertigo could be endured, perhaps in time even conquered as space-sickness could be conquered, by a strong will in a sound body; and that their new conveyance had possibilities of which even Rodebush had never dreamed. Finally, their most pressing questions answered, they turned their most powerful ultra-beam communicator toward the yellowish star which they knew to be Old Sol.

"Samms . . . Samms." Cleveland spoke slowly and distinctly. "Rodebush and Cleveland reporting from the 'Space-Eating Wampus', now directly in line with Beta Ursœ Minoris from the sun, distance about two point two light years. It will take six banks of tubes on your tightest beam, LSV3, to reach us. Barring a touch of an unusually severe type of space-sickness, everything worked beautifully; even better than our calculations showed. There's something we want to know right away—have we been gone four hours and some odd minutes, or better than two years?"

He shut off the power, turned to Rodebush, and went on:

"Nobody knows how fast this ultra-wave travels, but if it goes as fast as we did coming out it's certainly moving. I'll give him about thirty minutes, then shoot in another call."

But in less than two minutes the care-ravaged face of their chief appeared sharp and clear upon their plates and his voice snapped curtly from the speaker.

"THANK God you're alive, and twice that the ship works!" he exclaimed. "You've been gone four hours, eleven minutes, and forty-one seconds, but never mind about abstract theorizing. Get back here, to Pittsburgh, as fast as you can drive. That Nevian vessel or another like her is mopping up the city, and has destroyed half the Fleet already!"

"We'll be back there in nine minutes!" Rodebush snapped into the transmitter. "Two to get from here to atmosphere, four from atmosphere down to the Hill, and three to cool off. Notify the full four-shift crew—everybody we've picked out. Don't need anybody else. Ship, batteries, and armament are *ready!*"

"Two minutes to atmosphere, and it took ten coming out? Think you can do it?" Cleveland asked, as Rodebush flipped off the power and leaped to the control panel.

"We could do it in a few seconds if we had to. We used scarcely any power at all coming out, and I'm not using very much going back," the physicist explained rapidly, as he set the dials which would determine their flashing course.

The master switches were thrown and the pangs of inertialessness again assailed them—but weaker far this time than ever before—and upon their lookout plates they beheld a spectacle never before seen by eye of man. For the ultra-beam, with its heterodyned vision, is not distorted by any velocity yet attained, as are the ether-borne rays of light. Converted into light only at the plate, it showed their progress as truly as though they had been traveling at a pace to be expressed in the ordinary terms of miles per hour. The yellow star that was the sun detached itself from the firmament and leaped toward them, swelling visibly, momentarily, into a blinding monster of incandescence. And toward them also flung the earth, enlarging with such indescribable rapidity that Cleveland protested involuntarily, in spite of his knowledge of the peculiar mechanism of the vessel in which they were.

"Hold it, Fred, hold it! Way 'nuff!" he exclaimed.

"I'm using only ten thousand dynes, so she'll stop herself as soon as we touch atmosphere, long before she can even begin to heat," Rodebush explained. "Looks bad, but we'll stop without a jar."

And they did. Weightless and without inertia, gravitation powerless against her neutralizing generators, the great super-ship came from her practically infinite velocity to an almost instantaneous halt in the outermost, most tenuous layer of the earth's atmosphere. Her halt was but momentary. Inertia restored and gravitation allowed again to affect her mass, she dropped at a sharp angle downward. More than dropped; she was forced downward by one full battery of projectors; projectors driven by iron-powered generators. Soon they were over the Hill, whose violet screens went down at a word.

FLAMING a dazzling white from the friction of the atmosphere through which she had torn her way, the 'Boise' slowed abruptly as she neared the ground, plunging toward the surface of the small but deep artificial lake below the Hill's steel apron. Into the cold waters the space-ship dove, and even before they could close over her, furious geysers of steam and boiling water erupted as the stubborn alloy gave up its heat to the cooling liquid. Endlessly the three necessary minutes dragged their slow way into time, but finally the water ceased boiling and Rodebush tore the ship from the lake and hurled her into the gaping doorway of her dock. The massive doors of the air-locks opened, and while the full crew of picked men hurried aboard with their personal equipment, Samms talked earnestly to the two scientists in the control room.

" . . . and about half the fleet is still in the air. They aren't attacking; they are just trying to keep her from doing much more damage until you can get there. How about your take-off? We can't launch you again—the tracks are gone—but you handled her easily enough coming in?"

"That was all my fault," Rodebush admitted. "I should have neutralized inertia first, but I had no idea that the fields would extend beyond the hull, nor that they wouldn't act simultaneously. We'll take her out on the projectors this time, though, the same as we brought her in—she handles like a bicycle. The projector blast tears things up a little, but nothing serious. Have you got that Pittsburgh beam for me yet? We're about ready to go."

"Here it is, Doctor Rodebush," came the secretary's voice, and upon the screen there flashed into being the view of the events transpiring above that doomed city. "The dock is empty and sealed against your blast," and thereupon "Good-bye, and power to your tubes!" came Samms' ringing voice.

As the words were being spoken mighty blasts of power raved from the driving projectors and the immense mass of the super-ship shot out through the portals and upward into the stratosphere. Through the tenuous atmosphere the huge ship rushed with ever-mounting speed, and while the hope of Triplanetary drove eastward Rodebush studied the ever-changing scene of battle upon his plate and issued detailed instructions to the highly trained specialists manning every offensive and defensive weapon.

But the Nevians did not wait to join battle until the newcomers arrived. Their detectors were sensitive—operative over untold thousands of miles—and the ultra-screen of the Hill had already been noted by the invaders as the earth's only possible source of trouble. Thus the departure of the 'Boise' had not gone unnoticed, and the fact, that, not even with his most penetrant rays could he see into her interior, had already given the Nevian commander some slight concern. Therefore, as soon as it was determined that the great ship was being directed toward Pittsburgh the fish-shaped cruiser of the void went into action.

High in the stratosphere, speeding eastward, the immense mass of the 'Boise' slowed abruptly, although no projector had slackened its effort. Cleveland, eyes upon interferometer grating and spectrophotometer charts, fingers flying over calculator keys, grinned as he turned toward Rodebush.

"JUST as you thought, Skipper; an ultra-band pusher. C4V63L29. Shall I give him a little pull?"

"Not yet; let's feel him out a little before we force a close-up. We've got plenty of mass. See what he does when I put full push on the projectors."

As the full power of the Terrestrial vessel was applied the Nevian was forced backward, away from the threatened city, against the full drive of her every projector. Soon, however, the advance was again checked, and both scientists read the reason upon their plates. The enemy had put down re-enforcing rods of tremendous power. Three compression members spread out fanwise behind her, bracing her against the low mountainside, while one huge tractor beam was thrust directly downward, holding in an unbreakable grip a cylinder of earth extending deep down into bedrock.

"Two can play at that game!" And Rodebush drove down similar beams, and forward-reaching tractors as well. "Strap yourselves in solid, everybody!" he sounded a general warning. "Something is going to give way somewhere soon, and when it does we'll get a jolt!"

And the promised jolt did indeed come soon. Prodigiously massive and powerful as the Nevian was, the 'Boise' was even more massive and more powerful; and as the already enormous energy feeding the tractors, pushers, and projectors was raised to its inconceivable maximum, the vessel of the enemy was hurled upward, backward; and that of earth shot ahead with a bounding leap that threatened to strain even her mighty members. The Nevian anchor-rods had not broken; they had simply pulled up the vast cylinders of solid rock that had formed their anchorages.

"Grab him now!" Rodebush yelled, and even while an avalanche of falling rock was burying the countryside, Cleveland snapped a tractor ray upon the flying fish and pulled tentatively.

Nor did the Nevian now seem averse to coming to grips. The two warring super-dreadnoughts darted toward each other, and from the invader there flooded out the dread crimson opacity which had theretofore meant the doom of all things Solarian. It flooded out and engulfed the immense mass of humanity's hope in its spreading cloud of redly impenetrable murk. But not for long. Triplanetary's super-ship boasted no ordinary Terrestrial defense, but was sheathed in screen after screen of ultra-vibrations: imponderable walls, it is true, but barriers impenetrable to any unfriendly wave. To the outer screen the red veil of the Nevians clung tenaciously, licking greedily at every square inch of the shielding sphere of force, but unable to find an opening through which to feed upon the steel of the 'Boise's' armor.

"Get back—'way back! Go back and help Pittsburgh!" Rodebush drove an ultra-communicator beam through the murk to the instruments of the Terrestrial admiral; for the surviving warships of the Fleet—its most powerful units—were hurling themselves forward, to plunge into that red destruction. "None of you will last a second in this red field. And watch out for a violet field pretty soon—it'll be worse than this. We can handle them alone, I think; but if we can't, there's nothing in the System that can help us!"

And now the hitherto passive screen of the super-ship became active. At first invisible, it began to glow in livid, violet light, and as the glow brightened to unbearable intensity the entire spherical shield began to increase in size. Driven outward from the super-ship as a center, its advancing surface of seething energy consumed the crimson murk as a billow of blast-furnace heat consumes a cloud of snowflakes in the air above its shaft. Nor was the red death-mist all that was consumed. Between that ravening surface and the armor skin of the 'Boise' there was nothing. No débris, no atmosphere, no vapor, no single atom of material substance—the first time in Terrestrial experience that an absolute vacuum had ever been attained!

STUBBORNLY contesting every foot of way lost, the Nevian fog retreated before the violet sphere of nothingness. Back and back it fell, disappearing altogether from all space as the violet tide engulfed the enemy vessel; but the flying fish did not disappear. Her triple screens flashed into furiously incandescent splendor and she entered, unscathed, that vacuous sphere, which collapsed instantly into an enormously elongated ellipsoid, at each focus a madly warring ship of space.

Then in that tube of vacuum was waged a spectacular duel of ultra-weapons—weapons impotent in air, but deadly in empty space. Beams, rays, and rods of Titanic power smote cracklingly against ultra-screens equally capable. Time after time each contestant ran the gamut of the spectrum with his every available ultra-force, only to find all channels closed. For minutes the terrible struggle went on, then:

"Cooper, Adlington, Spencer, Dutton!" Rodebush called into his transmitter. "Ready? Can't touch him on the ultra, so I'm going onto the macro-bands. Give him everything you have as soon as I collapse the violet. Go!"

At the word the violet barrier went down, and with a crash as of a disrupting Universe the atmosphere rushed into the void. And through the hurricane there shot out the deadliest material weapons of Triplanetary. Torpedoes—non-ferrous, ultra-screened, beam-dirigible torpedoes charged with the most effective forms of material destruction known to man. Cooper hurled his canisters of penetrating gas, Adlington his atomiciron explosive bombs, Spencer his indestructible armor-piercing projectiles, and Dutton his shatterable flasks of the quintessence of corrosion—a sticky, tacky liquid of such dire potency that only one rare Solarian element could contain it. Ten, twenty, fifty, a hundred were thrown as fast as automatic machinery could launch them; and the Nevians found themselves adversaries not to be despised. Size for size, their screens were quite as capable as those of the 'Boise'. The Nevians' destructive rays glanced harmlessly from their shields, and the Nevians' elaborate screens, neutralized at impact by those of the torpedoes, were impotent to impede their progress. Each projectile must needs be caught and crushed individually by beams of the most prodigious power; and while one was being annihilated dozens more were rushing to the attack. Then, while the twisting, dodging invader was busiest with the tiny but relentless destroyers, Rodebush launched his heaviest weapon.

The macro-beams! Prodigious streamers of bluish-green flame which tore savagely through course after course of Nevian screen! Malevolent fangs, driven with such power and velocity that they were biting into the very walls of the enemy vessel before the amphibians knew their defensive shells of force had been punctured! And the emergency screens of the invaders were equally futile. Course after course was sent out, only to flare viciously through the spectrum and to go black!

OUTFOUGHT at every turn, the now frantically dodging Nevian leaped away in headlong flight, only to be brought to a staggering, crashing halt as Cleveland nailed her with a tractor beam. But the Terrestrials were to learn that the Nevians held in reserve a means of retreat. The tractor snapped—sheared off squarely by a sizzling plane of force —and the fish-shaped cruiser faded from Cleveland's sight, just as the 'Boise' had disappeared from the communicator plates of Radio Center, back in the Hill, when she was launched. But though the plates in the control room could not hold the Nevian, she did not vanish beyond the ken of Randolph, now Communications Officer in the super-ship. For, warned and humiliated by his losing one speeding vessel from his plates in Radio Center, he was now ready for any emergency. Therefore as the Nevian fled, Randolph's spy-ray held her, automatically behind it as there was the full output of twelve special banks of iron-driven power tubes; and thus it was that the vengeful Terrestrials flashed immediately along the Nevians' line of flight. Inertialess now, pausing briefly from time to time to enable the crew to accustom themselves to the new sensations, the 'Boise' pursued the invader; hurtling through the void with a velocity unthinkable.

"He was easier to take than I thought he would be," Cleveland grunted, staring into the plate.

"I thought he had more stuff, too," Rodebush assented; "but I guess Costigan got almost everything they had. If so, with all our own stuff and most of theirs besides, we should be able to take them. They must have neutralization, too, to take off like that; and if it's one hundred per cent we'll never catch them . . . but it isn't—there they are!"

"And this time I'm going to hold her or burn out all our generators trying," Cleveland declared, grimly. "Are you fellows down there able to handle yourselves yet? Fine! Start throwing out your cans!"

Space-hardened veterans all, the other Terrestrial officers had fought off the horrible nausea of inertialessness, just as Rodebush and Cleveland had done. Again the ravening green macro-beams tore at the flying cruiser, again the mighty frames of the two space-ships shuddered sickeningly as Cleveland clamped on his tractor rod, again the highly dirigible torpedoes dashed out with their freights of death and destruction. And again the Nevian shear-plane of force slashed at the Terrestrial's tractor beam; but this time the mighty puller did not give way. Sparkling and spitting high-tension sparks, the plane bit deeply into the stubborn rod of energy. Brighter, thicker, and longer grew the discharges as the gnawing plane drew more and more power; but in direct ratio to that power the rod grew larger, denser, and ever harder to cut. More and more vivid became the pyrotechnic display of electric brilliance, until suddenly the entire tractor rod disappeared. At the same instant a blast of intolerable flame erupted from the 'Boise's' flank and the whole enormous fabric of her shook and quivered under the force of a terrific detonation.

"Randolph! I don't see them! Are they attacking or running?" Rodebush demanded. He was the first to realize what had happened.

RUNNING—fast!"

"Just as well, perhaps, but get their line. Adlington!"

"Here!"

"Good! Was afraid you were gone—that was one of your bombs, wasn't it?"

"Yes. Well launched, just inside the screens. Don't see how it could have detonated unless something hot and hard struck it in the tube; it would need about that much time to explode. Good thing it didn't go off any sooner, or none of us would have been here. As it is, Area six is pretty well done in, but the bulkheads held the damage to Six. What happened?"

"We don't know, exactly. Both generators on the tractor beam went out. At first, I thought that was all, but my neutralizers are dead and I don't know what else. When the G-4's went out the fusion must have shorted the neutralizers. They would make a mess; it must have burned a hole down into number six tube. Cleveland and I will come down, and we'll all look around."

Donning space-suits, the scientists let themselves into the damaged compartment through the emergency air-locks, and what a sight they saw! Both outer and inner walls of alloy armor had been blown away by the awful force of the explosion. Jagged plates hung awry; bent, twisted, and broken. The great torpedo tube, with all its intricate automatic machinery, had been driven violently backward and lay piled in hideous confusion against the backing bulkheads. Practically nothing remained whole in the entire compartment.

"Nothing much we can do here," Rodebush said finally, through his transmitter. "Let's go see what number four generator room looks like."

That room, although not affected by the explosion from without, had been quite as effectively wrecked from within. It was still stiflingly hot; its air was still reeking with the stench of burning lubricant, insulation, and metal; its floor was half covered by a semi-molten mass of what had once been vital machinery. For with the burning out of the generator bars the energy of the disintegrating allotropic iron had had no outlet, and had built up until it had broken through its insulation and in an irresistible flood of power had torn through all obstacles in its path of neutralization.

"Hm-m-m. Should have had an automatic shut-off—one detail we overlooked," Rodebush mused. "The electricians *can* rebuild this stuff here, though—that hole in the hull is something else again."

"I'll say it's something else," the grizzled Chief Engineer agreed. "She's lost all her spherical strength—anchoring a tractor with this ship now would turn her inside out. Back to the nearest Triplanetary shop for us, I would say."

"Come again, Chief!" Cleveland advised the engineer. "None of us would live long enough to get there. We

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can't travel inertialess until the repairs are made, so if they can't be made without very much traveling, it's just too bad."

"I don't see how we could support our jacks . . ." The engineer paused, then went on. "If you can't give me Mars or Tellus, how about some other planet? I don't care about atmosphere, or about anything but mass. I can stiffen her up in three or four days if I can sit down on something heavy enough to hold our jacks and presses; but if we have to rig up space-cradles around the ship herself it'll take a long time—months, probably. Haven't got a spare planet on hand, have you?"

"WE might have, at that," Rodebush made surprising answer. "A couple of seconds before we engaged we were heading toward a sun with at least two planets. I was just getting ready to dodge them when we cut the neutralizers, so they should be fairly close somewhere—yes, there's the sun, right over there. Rather pale and small; but it's close, comparatively speaking. We'll go back up into the control room and find out about the planets."

The strange sun was found to have three large and easily located children, and observation showed that the crippled space-ship could reach the nearest of these in about five days. Power was therefore fed to the driving projectors, and each scientist, electrician, and mechanic bent to the task of repairing the ruined generators; rebuilding them to handle any load which the converters could possibly put upon them. For two days the "Boise" drove on; then her acceleration was reversed, and finally a landing was effected upon the forbidding, rocky soil of the strange world.

It was larger than the earth, and of a somewhat stronger gravitation. Although its climate was bitterly cold, even in its short daytime, it supported a luxuriant but outlandish vegetation. Its atmosphere, while rich enough in oxygen and not really poisonous, was so rank with indescribably fetid vapors as to be scarcely breatheable.

But these things bothered the engineers not at all. Paying no attention to temperature or to scenery and without waiting for chemical analysis of the air, the space-suited mechanics leaped to their tasks; and in only a little more time than had been mentioned by the chief engineer the hull and giant frame of the supership were as staunch as of yore.

"All right, Skipper!" came finally the welcome word. "You might try her out with a fast hop around this world before you shove off in earnest."

Under the fierce blast of her projectors the vessel leaped ahead, and time after time, as Rodebush hurled her mass upon tractor beam or pressor, the engineers sought in vain for any sign of weakness. The strange planet half girdled and the severest tests passed flawlessly, Rodebush reached for his neutralizer switches. Reached and paused, dumfounded, for a brilliant purple light had sprung into being upon his panel and a bell rang out insistently.

"What the blue blazes!" Rodebush shot out an exploring beam along the detector line and gasped. He stared, mouth open, then yelled:

"Roger is here, rebuilding his planetoid! *STATIONS ALL!"*

END OF PART III

Peril Among the Drivers

This is an ant story. We have, in the past, had some very remarkable productions treating of this very wonderful insect of which so much and yet so little is known. But it is fair to say that our author shows that he is the possessor of a fund of knowledge concerning these strange little beings, which forms the backbone of a delightful story full of human nature. Comparisons are odious, the proverb says, but we certainly put this story among the very best of its type, and that type as the reader will find, proves, in this case at least, a very interesting one.

By BOB OLSEN

Illustrated by MOREY

CHAPTER I

The Girl Who Craved Excitement

PANTING and wheezing from its battle with the tricky currents of the Kuanza River, the stern-wheel steamer nudged against the rickety wharf at Mrokamba. Without waiting for the hawser to be made fast, one of the passengers mounted the rotten gunwale and leaped nimbly ashore.

Anyone familiar with the "Who's Who" of polodom would have recognized the stalwart build and aristocratic features of this eager young man; and would have wondered why Gordon Cabot, the hard-riding, seven-goal back of the Santa Barbara four, had forsaken his luxurious Montecito estate in the midst of the California polo season to visit this execrable fly-speck on the map of West Africa.

His chestnut eyes gleaming with alert interest, Cabot gazed about him. All he could see of Mrokamba was a huddle of conical native huts and palm-thatched bungalows inclosed within a *boma* or corral. Overgrown with cadaverous fungus, stifling in the strangle hold of snaky creepers, the barricade seemed ready to give up its stubborn but hopeless struggle against the inexorable forces of the jungle.

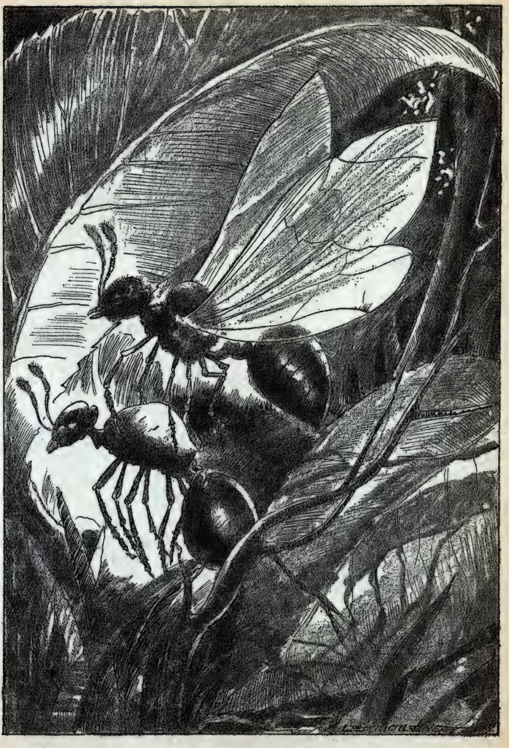
The atmosphere was sweltering. Over the river hung a miasmic mist, pungently flavored with the sickening honeysuckle fragrance of pawpaw blossoms. Combined with the suffocating heat and oppressive humidity, the earthly smells of precocious vegetation suggested to Gordon the interior of a greenhouse.

From somewhere in the bush came a weird, fearful call, almost human in timbre.

"What was that?" Cabot whispered to the captain of the steamer, who had joined him on the wharf.

"Elephant," was the reply. "Sounds like she's bein' driven by a mess of ants."

"Ants?" Cabot exclaimed. "An elephant being driven by ants? That's a



The heavy burden put a severe strain on his unpracticed flying muscles, but by dint of strenuous exertion he managed to keep aloft.

good one." With a laugh he added, "Your name doesn't happen to be Baron Munchausen, does it?"

"Course not. But speakin' of noblemen, there was a chap named Lord Dillingham, which came to Africa in the nineties or thereabouts. He was a heavy drinker, so they say. One day, while on a spree, he was foolish enough to lie down in the brush for a bit of a nap. He never woke up, he didn't. The ants came across him and ate him alive, so the story goes. Anyhow, they found his skeleton next morning. Every speck of meat was picked clean from his bones. It was completely dressed, the skeleton was. Not a thread of the clothing had been disturbed. There wasn't even so much as a scratch on his boots or his helmet."

"I've heard yarns like that before," Cabot told him. "But an elephant—a full-grown, perfectly sober elephant—surely you don't expect me to believe——"

He was interrupted by a rich, vibrant voice. Though he had not heard it for many months, he recognized it instantly. No other voice in the world could sound so sweet to his ears as that of Diana Freeland.

"Gordon! You darling!"

Like a living projectile of pink and gold she sped to him, throwing her arms around his neck, covering his face with kisses, and murmuring endearing phrases in his blushing ears.

As soon as he could recover from the effects of her exuberant greeting, Gordon held her off at arm's length and said: "Please stand still for a second so I can get a good look at you."

WHAT he saw was enough to delight any male human being.

Figure: Short, slender and straight-limbed, with just the right degree of fullness in the places where womanly curves are indicated. Hair: Naturally blond, naturally luxuriant, naturally curly. Gordon's own description: "Twisted skeins spun from goldenrod blossoms." Eyes: Incredibly large. Incredibly blue. Fringed with lashes of incredible length. Skin: Devoid of cosmetics, yet indescribably fair. By some magic charm, Diana had prevented the tropic sun and the desert winds from marring her arbutus-petal complexion.

Giving her shoulders a playful shake, Gordon declared: "Diana, you are the most adorable creature I have ever seen in my life. You sure look good to me."

"You wouldn't fool a poor goil, would you?" she smiled. "When it comes to looks, you're not so bad on the eyes yourself, lover of mine." And she held up her full lips for another kiss. The ceremony completed, she went on: "Now that's settled, suppose we take a stroll up to the exclusive residential section of our metropolis. I want you to meet Doctor Hermann Thurston. Perhaps you have heard of him. He was a great friend of my father's, you know."

Doctor Thurston's name was not familiar to Cabot, but he knew a great deal about Diana's father.

Embodying a rare blending of scholarly attainments and insatiable craving for excitement, Walter Freeland had deserted his post as Professor of Entomology in a New England university for the more glamorous work of exploring perilous regions in out-of-the-way corners of the globe.

When Diana was fifteen her mother died. Thereafter, she clung to her father's coat-tails, almost refusing to let him out of her sight. Like many people with small bodies, she had an exceptionally strong will. She was stubborn. She was determined. She was accustomed to having her own way. When she insisted on accompanying her distinguished father on his adventurous expeditions, there was nothing for him to do but consent. Four years later Walter Freeland died from the effects of a cobra bite, and Diana was an orphan.

Instead of discouraging her zest for excitement, her father's untimely death seemed only to fan the fires of her restlessness, driving her recklessly into perilous places and precarious situations.

She was twenty-two when Gordon first met her. Cruising along the coast of Lower California in his father's yacht, he had spied a disabled seaplane drifting in the choppy waters of Viscaino Bay. Its sole occupant was Diana Freeland. Delirious with thirst, her frail body wasted from hunger and exposure, she was in a serious plight when Gordon rescued her and rushed her to a hospital in San Diego.

He fell in love with her, of course. Nothing remarkable about that. Falling in love with Diana was like the whooping cough—every man who came near her was sure to catch it. The unusual thing was that Diana fell for Gordon—fell for him hard, in fact—but not quite hard enough to induce her to abandon her adventuring proclivities.

FOR several months after he became engaged to her, Gordon tried hard to keep pace with Diana in her frantic quest for thrills. When she swam the Hellespont, Gordon, who could swim far better than she could, insisted on paddling along beside her. When she piloted her airplane within a few feet of Kilauea's seething firepit, Gordon was in the front seat cranking a motion picture camera. When she was kidnaped by Chinese bandits, it was Gordon who provided the ransom money and risked his own liberty in bringing her back to civilization.

After each of these foolhardy escapades he tried to persuade her to marry him and return with him to his California estate. Always her answer was the same: "Please be patient with me, sweetheart. I'm not quite ready to settle down yet. But don't despair. One of these fine days I'll get completely fed up on excitement and, when that happens, I promise you that I shall become the most home-loving wife you ever had."

When he persisted in his pleading she said: "Listen, you sweet thing, you! Much as I have enjoyed you, I am not going to have you tagging around with me any more. To-morrow you are going to sail straight back to California, and you must stay there until I come to you or ask you to come to me. And if that isn't satisfactory to you, I'm afraid I shall reluctantly be compelled to——"

She had Gordon's ring as far as the middle joint of her finger when he grabbed her hand and laughed, "Never mind telling me what you are going to do if I disobey. I'm shoving off right now for California."

Three months passed—months which for Gordon were pregnant with anxiety and yearning. Then the thing for which he had waited so longingly came. It was a cablegram from Africa and it read as follows:

"IF YOU FEEL LIKE SEEING WOMAN WHO LOVES YOU COME QUICKLY TO MROKAMBA ANGOLA AFRICA.
DIANA."

CHAPTER II

A Preposterous Plan

WITH Diana leading the way, they walked along a path fringed with brilliantly hued aloes to a bungalow which was a little bit less decrepit than its neighbors.

Doctor Thurston was deep-chested and

stoop-shouldered. Bald was his large head, glistening like polished bronze. Bulging were his eyes which peered through thick, concave glasses with an expression of perpetual surprise.

After completing the formalities of presentation, Diana explained, "Doctor Thurston is hopelessly old-fashioned, Gordon. He still retains some quaint, Victorian ideas. One of them is that no woman should be allowed to take any important step without obtaining consent of her nearest male relative. Isn't he droll?"

Gordon tried to think of a fitting response but without success. Consequently he made a non-committal grimace and shrugged his shoulders.

"He's really a honey, though, in spite of his antiquated notions," Diana went on. "You see, I need his help to carry out a wonderful new plan of mine. If it succeeds it will be the greatest adventure that any human being has ever experienced. And Nunkey Hermann happens to be the only person on earth who can make it a success. He has half promised to help me, but he seems to think I am not responsible for my own acts; and he doesn't like to assume full responsibility for them himself. I told him, of course, that I have no living male relatives. Then he reminded me that I was engaged to be married. It was at this suggestion that I sent for you."

Gordon's face must have betrayed his disappointment, for she doubled up her small fist and gave him a playful but stinging jab on the left side of his jaw.

"Don't look so glum, lover of mine. Can't you understand that I wouldn't have sent for you if I wasn't madly in love with you? When Uncle Hermann made the suggestion I was so delighted that I kissed him on his shiny, bald pate—didn't I, Nunkey?"

Thurston grinned and nodded.

"But Diana, darling," Gordon protested. "How can you blame me for being disappointed? When I got your cable I thought it meant you were at last ready to marry me. Here I rushed over land and sea only to find that it is just another one of those foolhardy stunts of yours."

"Please, Gordon," she coaxed as she clung affectionately to his arm. "Please don't be pouty. Wait at least until you hear what my plan is. Who knows? Perhaps this is destined to be the thrill to end all thrills. Maybe it will make me so washed up on adventure that I shall be tickled to death to spend the rest of my days lolling languidly in your Monticito patio."

"Do you really mean it?" Gordon cried eagerly. "Do you mean that, after you have completed this new stunt of yours, whatever it is, you will be ready to marry me and settle down?"

"Perhaps," was her non-committal response. "I hate to make promises so far ahead. But if this venture turns out to be half as exciting as I expect it to be, I think that patio of yours is going to look mighty good to me after it is all over."

"In that case," he said, turning to Doctor Thurston, "I give my consent to Diana's proposition."

Thurston blinked and said, "Do you not think you should first find out the nature of your fiancée's plan?"

"No, Doctor. That isn't at all necessary. When you know Diana as well as I do you will understand this: Once she gets an idea in that delectable head of hers she will find some way to carry it out in spite of everything. I've learned that it is best to agree first and get the details afterward."

"You darling!" Diana exclaimed as she leaned over and kissed the tip of his ear. Then to Doctor Thurston she said proudly, "Do you blame me for loving this man?"

The scientist didn't reply. He merely shook his head as if the ways of modern youth were too incongruous for him to understand.

"Well," Gordon laughed. "Suppose you tell me about the great adventure to end all adventures."

"O. K." Diana responded. "I'll start by reminding you of something you already know: My father was a very versatile man. He accomplished some very outstanding things along several different lines. But the subject that interested him most of all was myrmecology."

"Myrmecology?" Gordon echoed. "What in the name of confusion is that?"

Gravely she informed him that myrmecology was the science of ants.

"DAD had an admiration for ants that bordered almost on veneration," she explained. "He devoted the major part of his life to studying the Ant People, as he used to call them. I often heard him say that in the world of insects the ants occupy the same dominant position that men do in the realm of mammals."

"Yes, I know all that," Gordon assured her. "I've read most of your father's works on popular science."

"Naturally Dad found out a lot about ants," Diana continued. "But he never was satisfied. He was always deploring the limitations of ordinary observation. He likened himself to a man from Mars soaring over New York in a rocket ship and gazing at the city and its inhabitants through a telescope. The Martian would be able to learn something about the earth-people, to be sure, but the information he could acquire in that way would be very incomplete. Do you get the analogy?"

"Not very clearly," Gordon confessed.

"Then let me amplify: Scientists like my Dad have studied insects from the outside. They have found out that, like human beings, the ant people make roads and bridges and tunnels, that they domesticate other creatures, that they make slaves of alien ants, that they wage wars, that they cultivate crops and use tools and do other things that we like to think are exclusively human. But it stands to reason that this information—astounding as it may seem—must be very incomplete. The only way to study these interesting creatures thoroughly is to become an ant and to live among them. *And that's precisely what I intend to do!*"

"What!" Gordon ejaculated. "You intend to become an ant? Surely you must be joking—or else——"

"No. I'm not insane and I'm not joking. I'll admit that the idea sounds crazy. Nevertheless I believe it is perfectly feasible and Uncle Hermann agrees with me."

Gordon looked appealingly at Doctor Thurston, hoping for a denial; but the elderly scientist disappointed him. Instead, he declared, "Diana's statements are substantially correct, Mr. Cabot. Not that I approve of her plan, you understand. My contention is that it is not right for a young and beautiful girl like Diana to risk her precious life in an undertaking which promises to be so egregiously hazardous. But, so far as the enterprise itself is concerned, you may rest assured that it is entirely feasible."

"You mean that it is possible for Diana to become an ant?"

Thurston nodded.

"Why the idea is utterly preposterous!" Gordon exclaimed.

"Many valid concepts are preposterous—to those who do not understand them fully."

"Then you really are serious? You

actually believe it possible to convert a human being into a bug?"

"It isn't a question of believing. I *know*. And the reason I am so positive it can be accomplished is that I have already succeeded in doing it. I myself can transfer the *ego* or consciousness of a human being into the body of any animal or insect."

OBSERVING the look of incredulity on Cabot's face, Doctor Thurston added, "Evidently you are not familiar with the science of metempsychosis."

"I beg your pardon."

The scientist repeated, "Perhaps you are not familiar with metempsychosis."

"Familiar with it?" Cabot jested. "I'm not even aware of its existence. Didn't know there was such a word in the dictionary as met—whatever you call it."

"Metempsychosis," Thurston reiterated. "That is the scientific term for something I am sure you have heard of many, many times. There are countless references to it in the literature of mythology, folk-lore, history, philosophy and even in the Scriptures. Perhaps you will recognize it more readily by its more popular name—*transmigration of souls*. You know of course that transmigration occupied very important places in the religious and philosophical beliefs of the ancient Egyptians and many other people who were highly developed intellectually. I assume that you have heard of Pythagoras."

"You mean the fellow who invented the proposition about the square on the hypothenuse of a right angle triangle being equal to the sum of the squares on the two legs? Guess I ought to know about him. I sure sweated over his theorem when I was studying geometry."

"Pythagoras was a great mathematician," Thurston rejoined, "but he was even more famous as a philosopher, scientist and profound thinker. He believed in transmigration of souls—in fact the name of Pythagoras is inseparably allied with the science of metempsychosis. Though he lived in the sixth century B. C. he seems to have known a great deal more than many of the so-called scientists of today. Plato, another great intellectual genius, who died in 348 B. C., also believed in metempsychosis."

"Is that a fact," Cabot doubted.

"Indeed it is. As I intimated before, the literature of practically all cultured people is full of references to transmigration. Two classic examples are the story of Circe, who turned her visitors into hogs, and the scriptural account of the evil spirit which was driven out of a man and into a herd of swine."

"But surely," Gordon protested, "surely you do not mean to imply that these examples you just cited were scientific facts. Weren't they more in the nature of fables and fairy tales?"

"Perhaps," the older man replied. "But, to the uninitiated, the wonders of modern science are just as hard to believe as fairy tales—perhaps more so. If you reflect a trifle, you will observe that practically all of the conceptions of mythology and folk-lore—which used to be regarded as fantastic and absurd—have been realized or surpassed by modern inventions. Sometimes I wonder if the writers of ancient times did not know more about science than we do today. In the case of metempsychosis, that seems most likely."

Diana cut into the two-sided conversation with "Uncle Hermann, why don't you show Gordon your transmigrating machines?"

"I was just about to make that very suggestion," the scientist assured her.

He led the way to a hut in the rear of his bungalow. Hand in hand, like two small children, Gordon and Diana followed him.

As Thurston unlocked the door and revealed a bewildering conglomeration of tubes and coils and fantastically shaped contrivances, he said proudly, "Considering our remote location, I have been able to fit out an excellent laboratory. I was fortunate enough to discover a small waterfall only a short distance from here, where I installed a turbine and generator which provides all the electric current I require for my experiments."

PLACING his hand affectionately on an object shaped like an enormous casket, he announced, "This is one of my metempsychosis machines. It is suitable for large animals, such as dogs, lions and human beings. You will notice that there is a door at this end. With these clamps I can seal the cabinet hermetically. In order to give you an idea how it works I am going to leave it open. Just stand in front of the opening and notice what happens when I turn on the current."

He threw a switch and a queer mechanism within the cabinet began to drone. It emitted a weird whine which grew higher and higher in pitch until it faded away to silence.

Gordon peered into the casket. The air within seemed to be quivering soundlessly, like heat waves over a red hot stove.

"Do you feel anything?" Thurston asked him.

"Yes, I do. A very peculiar sensation. I seem to be glowing all over. It's a sort of warmth. Not heat you understand—just a wonderful, rapturous warmth."

Gordon stepped closer to the opening of the cabinet.

With a quick motion, Doctor Thurston snapped off the switch.

"Why did you do that?" Cabot demanded. "Why didn't you leave it on? I was getting a kick out of it."

"Rather a dangerous kick if it had continued much longer," Thurston smiled mirthlessly. "Even at a distance, those vibrations are powerful enough to dislodge your soul from your body."

"Perhaps I'd enjoy the experience," Gordon jested. "Is that all there is to your transmigrating machine?"

Thurston nodded.

"Seems simple enough," the young man went on. "What's the principle that makes it work?"

"It depends on the same principle that is inherent in practically all forces, namely vibration."

"Vibration?" Gordon echoed.

"Yes. Vibration. I assume you know that nearly all manifestations such as sound, radio, heat, light, X-rays and electricity are dependent on vibrations of different kinds, speeds and frequencies."

"Sure!" Cabot said. "I know that the forces you mention all travel in waves. Let me see. Doesn't light travel at the rate of one hundred and eighty-six million miles per second?"

"You are exaggerating slightly," Thurston laughed. "The speed of light is approximately one hundred and eighty-six *thousand*, not so many *million* miles per second. But that is quite speedy enough for ordinary purposes."

"What about radio waves?" Gordon asked. "Don't they travel at the same speed as light waves?"

"That is correct. But there is a vast gap between radio waves and visible light rays. Compared to light waves, radio waves are extremely long. They range from a few centimeters to several thousand meters in length, as measured from the crest of one wave to the crest of the next one. Nevertheless, because of the enormous speed at which they travel, their rate of vibration is of a very high frequency."

"Does that have anything to do with your machine?" Gordon inquired.

"Not directly, except that the vibrations produced in my metempsychosis machine occupy a position between the frequencies of radio waves and sound waves. You know of course that sound waves are altogether different from radio and light waves."

"Naturally."

"Light waves vibrate transversely," the scientist went on. "Sound waves vibrate longitudinally, by a series of compressions and expansions in the medium through which the sound travels. Compared to light, sound is an egregious slow-poke. It loafs along at the extremely slow speed of approximately five miles per second. This speed, as you know, varies with the temperature and density of the atmosphere. But I fear I am boring you with this technical explanation."

"Not at all," Gordon assured him. "On the contrary, I find it extremely interesting. Nevertheless, I would like to learn more about your transmigrating machine."

"I was leading up to that. As I said before, the vibrations produced by my machine have frequencies which come between the highest audible sound and the longest radio wave. Please don't infer from what I say that these vibrations are like either fast sound waves or slow radio waves. They really are quite different from any other kind of wave—so different in fact that I have given them a special designation, namely metempsychosis waves. They have the unique property of being able to jar loose the soul, spirit, ego, or whatever you wish to call the consciousness of an animal, and to separate this spirit from the physical body. That's all there is to my machine except for a simple mechanical contrivance for conveying the spiritual substance from the body of one animal into that of another creature."

"Would you mind explaining that part of the process?"

"Gladly. You see the spirit substance, being considerably lighter than air, tends to rise. You will notice that there is a tube leading from the cabinet at the point where it is highest. It can be coupled to any of these other cabinets. I have several of them here, of varying sizes. Inside each of them is an intake tube equipped with a flexible cap. This is fitted over the head of the animal or insect which is to receive the spirit. Like other forces, this spiritual substance follows the path of least resistance. It enters the new body through the mouth, nostrils, ears and other cavities."

"And how do you bring your subjects back to consciousness again?"

Simply by reversing the transmigrating device, starting it fast and slowing it down gradually. By the time the vibrations have reached the lowest rate of fluctuation the subject has awakened, none the worse for the experience."

"Except that it has a borrowed soul," Cabot amended.

"Yes, of course—a borrowed soul which I can return to its rightful owner whenever I desire."

"Which may be highly important to the rightful owner of the soul," Gordon laughed. Then, turning to Diana, he said, "What I cannot understand, my dear, is why you want to try this preposterous plan of yours on an ant. If you are looking for adventure, why don't you have yourself turned into a perfectly nice lion or tiger or some such beast as that?"

"DON'T be silly," Diana admonished him. "In the first place, there are no tigers in Africa and it would be ridiculous to import one here from India. And as for lions—their lives are altogether too dull and uninteresting."

"But aren't the lions the lords of the jungle?"

"Lord no! Lions don't even live in the jungle—they spend their uneventful lives in the open veldt. And as for being kings or lords—that is utterly ridiculous. The real lords of the jungle—or rather of the bush, as we call it here in Africa—are the ants. When they are on the warpath there isn't a single creature, from a spider to an elephant, that dares to stand in their way. And when I make that assertion, I don't need to exclude the egotistical biped who calls himself *homo sapiens,* with the accent on the sap!"

What could Gordon say in reply to that? Exactly what he did say: Nothing.

CHAPTER III

An Insect Invasion

ONCE it was definitely decided that Diana was to masquerade as an ant for an indefinite period, Gordon urged an immediate start. As he expressed it, he wanted her to get it out of her system as quickly as possible. He learned, however, that it was not feasible to begin immediately. One very important matter had to be attended to first. It was necessary for Doctor Thurston to collect a number of live ants, from which to choose the one individual that was to be the receptacle for Diana's soul.

The scientist emphasized the care which must be taken in making this selection. The insect chosen must be strong and healthy, of course, but, more important than that, it had to possess exactly the right kind of odor. He explained that each species of ant, each family and each individual had its own distinctive smell. By scent alone, friends are distinguished from enemies. Should an ant, even if it belongs to the same species, be placed in a colony to which it does not belong, it would be torn to pieces instantly.

Though the bush surrounding the village of Mrokamba was heavily infested with ants, it took the doctor several days to find any that exactly fitted the requirements.

Diana insisted that she must be a Driver Ant first.

"The Drivers are the most primitive of the Ant People," she explained. "They are not as smart as the Slave Makers nor as civilized as the Farmer Ants, but they live much more adventurous lives, and adventure is the mostest thing I don't want nothing else but. Later on I may decide to try living among the more highly developed races of ants."

"Heaven forbid!" was Gordon's prayer.

Since the Drivers have an aversion for direct sunlight, Thurston had to do most of his hunting with the aid of a flashlight at night. He was too brushwise to wander very far away from the village after sundown.

But one evening—the fifth one after Gordon's arrival—Mrokamba became the scene of an amazing spectacle. It started with an uneasy stirring in the bush. The usual noises of the jungle became louder and more frequent. Then, without further warning, a host of animals came stampeding through the bush a short distance from the settlement. They were of all sizes and descriptions. Leopards and umpala gazelles, lions and kudus, ran side by side, paying no attention to each other in their mad rush to escape from some terrible scourge that pursued them all.

"What can be the matter?" Gordon asked Doctor Thurston. "Those beasts behave just like animals in America do when a forest fire breaks out."

"They are running away from something they fear worse than fire," the scientist told him.

"What can that be?"

"The ants! The Driver Ants! They are coming! Can't you hear them?"

Gordon listened. From the distance came a faint, rustling noise. It sounded like a sackful of peanut shells being shaken up and down. As the sound became louder he noticed that it was mingled with a faint piping, as if many thousands of tiny whistles were being blown at once.

Thurston dashed into his cabin, emerging a few minutes later clad in high boots, with whipcord breeches, khaki shirt, a beekeeper's veil and thick gauntlets. Over his shoulder was slung a specimen case. He was carrying a large trowel in his hand.

"THIS is luck!" he shouted to Gordon. "Now I can catch all the ants I need. You had better hurry to your room and climb into bed. Perhaps you noticed that all four legs of your bed are standing in pans full of vinegar. The netting is close mesh, so the ants can't get through it if they drop down from the ceiling. But be very careful not to let any of the bed-clothes trail to the floor. And don't try to get out of bed, no matter what happens. If you take all these precautions you will be *reasonably* safe."

Gordon didn't like the way he emphasized the word "reasonably."

"What about Diana?" he demanded.

"I've warned her already. She must be in bed by this time."

To make sure, Cabot knocked on Diana's door.

"Come in, Gordon!" she sang out musically.

"Are you all right, darling?" he said as he opened the door just enough to stick his nose inside.

"Yes, my love. I'm perfectly O. K. Come here and kiss me good-night. Then you had better climb into your little beddy-beddy before the naughty bugs eat you up."

Gordon wasn't satisfied with one good-night kiss. He insisted on taking three. In the midst of the last one he felt a sharp pain in his ankle. Looking down, he saw a thin black line extending from his foot to the door. A dozen of the tiny creatures were already gnawing busily at his leg. He brushed them off and departed hastily, calling over his shoulder, "Good-night, beloved! You seem to have a very competent gang of chaperons. See you in the morning!"

He reached his room a few inches ahead of a wave of black squirming bodies which seemed to flow like a living river across the threshold.

With a sigh of relief he hopped into his bed and drew the netting tight behind him. Then, with a suddenness that was typical of the tropics, the blanket of night quenched the brief twilight and the room was plunged into darkness. Breathing a prayer of thanks for Doctor Thurston's electric power plant, Gordon switched on his bed-light and peered through the curtains.

Already the floor was covered with a moving carpet of insects. So tightly were they crowded together that he could not see so much as a single patch of yellow matting between their quivering bodies. He looked around the room and discovered that the ceiling and the walls were being rapidly overrun by the ants. Through every hole and crevice they poured endlessly.

Soon there were noises and commotions which told eloquently of tragedies being enacted in every part of the house.

During the few days he had lived in Africa Gordon had, of course, learned that all human dwellings are heavily infested by vermin of every description. Enormous cockroaches, great hairy spiders, ferocious looking caterpillars, small animals resembling rats—even snakes and scorpions inhabited in large numbers the thatched roofs and the spaces between the walls. These unwelcome guests defied all efforts of their human hosts to evict them—that is, until the Drivers arrived. Then they all tried to leave at once. But very few of them succeeded.

From the frantic scampering and from the death cries which he heard all about him, Gordon knew that hundreds of creatures were being eaten alive by those ruthless Huns of the insect world. Most of the murders were committed beyond his range of vision, but he witnessed one tragedy which gave him a clear idea of how the Drivers hunted and devoured their victims.

HEARING a hissing noise that was so loud and insistent that it could be heard above the tumult, Gordon looked up just in time to see what looked like a slender rubber hose push itself out from the roof. For an instant it dangled there, then it dropped. It landed with a plop on a circular table which stood in the middle of the room—luckily for Mr. Snake. Luckily—at least for a few minutes. There were no ants on the table and for a while it looked as if the small reptile was safe.

But not for very long.

The inexorable hunters must have scented the creature, for they soon began to swarm up over a chair which stood with its back but a few inches from the table top. The snake was crafty enough to remain on the table.

But the ants were not to be so easily thwarted. They crowded along the back of the chair, searching for a place to cross over to their quarry. Then Gordon beheld an amazing thing. Clinging to each other's bodies, the tiny bugs formed a living chain. Slowly it grew, swaying to and fro until the ant at the bottom end was able to clutch the edge of the table and hold fast. Thus was completed a bridge of insect bodies, across which thousands of the six-legged fighters rushed.

In an instant the body of the snake was completely covered with them. Vainly it squirmed and lashed and hissed. Soon its terrific struggles ceased entirely and the ants settled down to the grim business of stripping every particle of flesh from its bones. At the end of a half hour there was nothing left of the snake but a skeleton, picked clean of everything that was edible.

Gordon hated to think of what might have happened to Diana without the protection of those four small pans of vinegar. Although he knew that the ants on the floor were only a fraction of an inch thick, he had the feeling that if he ever stepped into that swirling sea of black bodies he would sink out of sight completely.

For some time he had been aware of a nauseating stench, but he had been too busy watching and listening to pay much attention to his olfactory sensations. Now he recognized the smell. It was the unspeakable odor of carrion. It came from the ants, and they smelled that way because they ate nothing but meat!

CHAPTER IV

Preparations and Warnings

WHEN Gordon awoke the following morning he thought at first that the events of the previous evening had been just a horrible nightmare. The Drivers had departed as mysteriously as they had come. Except for the moth-wings scattered over the floor and the whitened bones of the snake on the table, there was no evidence that anything unusual had occurred.

At the breakfast table there was much to talk about.

Doctor Thurston beamed with enthusiasm.

"What a blessing these Army Ants are," he glowed.

"Blessing?" Gordon exclaimed. "You call those horrible creatures a blessing?"

"Certainly. The natives call them 'Ants of Visitation.' They look forward to the periodic visits of these intrepid fighters."

"The natives must be crazy," was Gordon's comment.

"Not at all. As you know, our dwellings are infested by vermin of all sorts. Men have never found any way to get rid of them. But the Drivers do the job in a few hours. For a while at least we shall not be bothered by cockroaches, spiders, snakes or any other pests. The ants have either devoured them or driven them away."

"What about the ants themselves? I should think they would be worse pests than all the others put together."

"They would be if they outstayed their welcome. Fortunately they know the proper etiquette of calling. When their mission has been fulfilled they move out, bag and baggage."

"So I observe. By the way, Diana, how did you make out last night?"

"Fine," she assured him. "Weren't those ants glorious, though?"

"Glorious?" he cried. "To me they were utterly disgusting. Surely, after what you saw and heard and smelled last night, you do not still want to become one of those atrocious creatures?"

"Even more than ever," she declared. "I think they were wonderful." Turning to Thurston, she inquired: "By the way, Nunkey, what luck did you have with *your* hunting last night?"

"Splendid luck," he told her. "I secured several hundred very fine specimens belonging to all the different castes. You will have an excellent assortment from which to make your selection. Have you thought about what particular style of ant you would like to be?"

"Are there so many different kinds?"

"There are at least five distinct castes—all of them children of the same mother, yet differing so much in size and structure that they might easily be mistaken for insects of entirely different races."

"What are the different castes?" Gordon inquired.

To which Thurston replied: "The principal ones are the soldiers, who do most of the fighting; the workers, who carry the eggs, larvæ, cocoons and surplus food supply; the queen mother, who does nothing but lay eggs; the winged females, or virgin princesses; and the males, who are the least important of all.

"Sort of necessary evils," Gordon suggested.

"They are not even necessary. Reproduction can take place without them, though a better race always results when matings take place in the usual way. Once he has performed his only useful function, the male is allowed to shift for himself. He is so stupid that he never lives for more than a few hours after that."

"What about the females? They don't live very long either, do they?"

"Many of them perish, of course. But if a fertilized female succeeds in the precarious task of starting a colony, she can usually look forward to a long and prosperous life. It has been definitely proved that queen ants sometimes live to be fifteen years old or more—a surprising age for an insect."

"I THINK I'd rather be a princess," Diana cut in. "As I understand it, they don't have to work and they don't have to fight. Also, they have wings and their eyesight is much better than that of the workers and soldiers. That's true, isn't it?"

"Only partially. It is true that most virgin female ants have wings and can see very well. It happens that the Drivers (or Dorylii) are exceptions to this rule. All the workers and soldiers of this species are stone blind, you know. The females are also blind and they have only the merest vestiges of wings, so they cannot fly, either."

"Even so, I want to be a princess," Diana persisted.

"How about the greatly despised males?" Gordon wanted to know.

"They can fly very well. Also, they have excellent eyesight—for obvious reasons. Why do you ask?"

"I'll tell you why. While we have been talking here, I have arrived at a momentous decision. If Diana refuses to reconsider—if she persists in going through with this outrageous plan of hers—I must insist on going with her."

"Oh!" Diana exclaimed. "Do you mean that?"

"Absolutely, positively and emphatically!" was Gordon's declaration.

"You darling!" With one leap she was out of her chair and had her arms around his neck, upsetting a cup of coffee in his lap in her boisterous enthusiasm.

"We had better make haste," the scientist warned them. "There isn't a moment to spare. If there is anything either of you want to do before leaving—any last message to write, or anything like that—you had better do it at once.."

"No final rites for me," Diana punned. "How about you, Gordon?"

"I'll just dash off a few lines to Dad. It will take me only a minute or two."

"O. K.," said Diana. "As soon as you are ready, join us in the lab."

When Gordon entered the laboratory he found Diana and Doctor Thurston bending over a glass tray in which some ants of various sizes and shapes were crawling about. The girl picked up one of the largest ones with a pair of tweezers and examined it through a magnifying glass.

"Isn't she beautiful?" she said over her shoulder to Gordon.

He made a wry face. "Hardly beautiful," he disagreed.

"Well, whether or not you like her shape, you had better take a good look at her because in a few minutes her name is going to be Diana Freeland. Here. Take a pair of tweezers and see if you can pick out a nice male bug for your own sweet soul to inhabit."

"Which ones are the males?" Gordon asked as he poked around among the bustling insects with the tweezers.

"They are easy enough to find. They are those big fat ones—the only ones with wings."

"Surely they aren't ants," he doubted. "They look more like bumble-bees."

"Nevertheless they are Driver ants of the male caste."

"Guess I'll have to take your word for it. How about this one. Does he look O. K. to you?"

"I see nothing wrong with him. Suppose we put him in this box for the time being. Before we start with the experiment we must agree on some plan whereby I can ultimately locate your ant-bodies and restore you to your human forms."

PICKING up a small brush he went on: "I shall first paint a yellow cross on the gaster, or abdomen, of each of these ants. That will enable me to recognize you."

"But suppose we want to reach you," Gordon suggested.

"I have provided for that also. While your ant army is on the march I shall strive to keep as close to it as possible. This will be difficult, but I think I can manage it. At regular intervals I shall make my presence known to you in two ways. First I shall signal audibly with a whistle which produces a very shrill note, one that will carry a long distance and will be easily perceivable by your insect sense organs. I shall also impregnate my boots with a scent that is distinctive and penetrating. When you wish to return, all you need to do is to follow the sound or the odor until you locate me. Crawl up on one of boots and I shall immediately know you."

"But how about our human bodies?" Cabot asked. "Won't it be rather risky to leave them here while you are trailing the ant army all over Africa? Suppose your laboratory should catch fire, or suppose——"

"I have provided for every contingency," the doctor interrupted him. "One of our neighbors is Doctor Dean, a physician in whom I have the utmost confidence. You haven't met him yet, but Diana knows him."

"Sure," was the girl's verification. "Doctor Dean is O. K., Gordon."

"Dean has consented to devote all his time helping us with this experiment," Thurston went on. "He will guard your human bodies and will see that they receive whatever attention they require. Have you any other questions?"

"Yes," Cabot said. "There's one thing more I'd like to know."

"And that is?"

"Shall we be able to talk to each other, Diana and I—after we have become ants?"

"I don't think there is any doubt that you will be able to communicate with each other," the scientist answered. "It has clearly been shown by extensive observations and repeated experiments that ants must have some means of communication. Just how they do this has not been definitely established, but evidence seems to indicate that they signal to each other with their antennæ. Of course, you understand that this system of conveying ideas must be quite different from human speech, but undoubtedly it is none the less intelligible to the ants themselves. Is there anything else you would like to know?"

"Not that I can think of right now."

"And you, Diana? Have you any questions?"

Diana shook her head and smiled. "I'm ready, Uncle Hermann."

"Then permit me to give you two your final instructions: After I place you inside the transmigration cabinets you will simply relax. In a few minutes you will fall into a peaceful sleep. On awakening you will have your new ant bodies. In order to familiarize you with the signals I have just explained, I shall try them all out before we leave the laboratory. You can indicate that you are able to perceive and follow them by coming to me and crawling up on my boot. I shall also place before you some food in the form of ant eggs. These are considered a great delicacy by all ants. You must eat heartily of the eggs. This ought to provide you with enough nourishment for many days in case you do not wish to eat any of the game which the Drivers kill. Another advantage of having your crops full of palatable food is that it may help you in case any of the guards challenge you."

"DOES that mean that we will need a pass-word to join the ant army?" Gordon asked.

"Not exactly. But the ants have very efficient methods for detecting and promptly executing all outsiders. As I told you before, they recognize their brothers and sisters by scent alone. Since these ants which we have selected are fresh from the colony, they ought to smell all right, unless their odor is changed by the transmigration machine."

"And suppose we are challenged—what shall we do then?"

"The best plan will be to try bribery."

"Bribery?"

"Yes. Most of the food an ant eats goes into a sort of social stomach known as the crop, from which it can regurgitate a portion of it whenever it desires. I believe that if you offer some nice premasticated ant eggs to one of your soldier sisters she will accept it and permit you to go on your way unmolested."

Following the doctor's instructions the two young people crawled inside the chambers of the machines assigned to them and stretched out, flat on their backs.

Gordon wasn't exactly afraid, but he did have a queer feeling just below his diaphragm, when he heard the door close. Almost at once the metempsychosis impulses started. Long before the machine had reached its maximum velocity, he had fallen into a luxurious, blissful slumber. He felt as if he were floating in space, untrammeled by the earthward pull of gravitation. Opening his eyes he looked about him and was astonished to see his own body lying asleep a few inches below him. But this impression was only momentary. In an instant he felt himself floating—or rather flowing upward. Sleep once more overcame him.

It seemed to be but a few seconds later when he awoke again. The first thing he did was to inspect his own body. It didn't take him long to realize that the first part of the experiment had been successful. His consciousness was now clothed in the winged, six-legged, sable-hued body of a male ant.

He felt something touch his forelegs. It was light colored and looked like the edge of a large board.

"That must be a piece of paper," he reflected. "Thurston probably wants me to climb up on it."

To test out his theory, he scrambled over the edge of the white object. With amazing swiftness it lifted him up into the air, and then lowered, coming to rest on another object which he correctly guessed was the floor of the laboratory.

Soon he became aware of the propinquity of another insect. Gordon had always looked upon ants as ugly, disgusting pests, but this particular ant was one of the most attractive creatures he had ever beheld. Its rotund, elongated gaster glistened immaculately, like patent leather. Joined to it by a slender waist was the chitin-armored thorax to which all six legs were attached. The head was round and large and was armed with a pair of sickle-shaped mandibles which looked formidable but none the less charming. From between them waved the graceful, jointed antennæ.

The delectable creature came close to him and began stroking his head with her feelers. Though Thurston's explanation had prepared him, Gordon was surprised at the ease with which he was able to interpret the message she tapped out in the emmet version of the Morse code.

The signals did not come through as words or symbols, of course, but rather in the form of thought pictures, which singularly were much easier to comprehend than spoken language.*

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*In chronicling the "conversations" which took place between Diana, Gordon and other ants of the Driver colony, the author has attempted in each case to select the words which would most accurately suggest the *thoughts* as they were actually exchanged. It is understood, of course, that no symbols corresponding to the English words were really used by the ants in transmitting their *thought messages* to each other.

"HELLO, sweetheart," Diana seemed to be saying to him. "Are you convinced now?"

"Yes, of course," was the message he tapped back to her.

Just then he heard a loud, musical sound which reminded him of a pipe-organ.

"That must be our friend calling us," he signaled to the female ant. "Let us see if we can find him."

Together they walked in the direction from which the sound seemed to come. Soon Gordon saw an odd-shaped, brownish hill looming up before him.

"I can see the Doctor's boot," he said in the ant language. "Over this way."

Nimbly they climbed up on the boot. A large, leathery object ridged with deep corrugations (which Gordon surmised was Thurston's finger) descended and gently stroked each of them in turn. Then it nudged them a bit roughly.

"I think he wants us to climb down again," Gordon suggested.

"O. K. Let us do it."

When they reached the floor, the brown object disappeared.

"He is walking away to try something else," said Diana.

This was verified an instant later when a peculiar odor was wafted to their smell organs, which were situated in the tips of their antennæ.

Again they walked toward the source of the signals and found the huge boot without difficulty.

Next they were scooped up on a piece of paper and were deposited inside what looked like an enormous circular room, which really was a round powder-box.

Followed then a long interval, during which the two human ants sensed that they were being carried for a considerable distance.

Finally, above the other noises of the brush, they heard loud trumpetings. It sounded like an enormous band—thousands of wind instruments all being tuned up at the same time with an absence of melody or harmony. Neither were there any conspicuous discords, and the concert produced a pleasurable effect in the minds of both the ant-humans.

AT the same time they became cognizant of a powerful odor. Gordon associated it dimly with the carrion smell which had nauseated him the night before when he was besieged in his bed by the Driver Ants. But the scent which had been a disgusting stench to his human nostrils seemed fragrantly attractive to his ant smell-organs.

The box in which they had been conveyed from the laboratory was tilted up, with its floor perpendicular to the ground. Clinging to the cardboard, face downward, Diana drew close to Gordon and spoke thus with her antennæ: "Lover of mine, this is the crisis! The next few seconds will probably decide whether we are to survive or perish. Whatever happens, I want you to know that I appreciate all you have done for me and that I love you with all my heart."

"And I love you, my darling. I shall keep on loving you forever."

Then, side by side, they stepped out of the pill-box right into the midst of that army of ferocious killers.

CHAPTER V

Danger and Strategy

DIANA and Gordon expected to be challenged but they were not prepared for the panic of excitement which greeted their arrival amidst the Ant Army. All around them crowded the small worker ants. Most of them were burdened with larvae, grape-like clusters of eggs, or particles of food, which they carried in their mandibles. Scores of the emmet laborers dropped their burdens and rushed at the two newcomers, jostling them, nudging them and tugging at them excitedly, but without inflicting any serious injuries.

From the belligerent gestures of their antennae, Gordon gathered that they were suspicious and menacing; but their antagonism seemed to be held in check by favorable, conflicting impressions which they apparently obtained from their inspections of the ant-humans.

Remembering what Doctor Thurston had told him, Gordon regurgitated a droplet of food and offered it to the worker that was closest to his mouth. Diana did likewise. Much to their consternation the other ants refused to accept the proffered tid-bits.

"Looks like they are too excited to notice our gifts," Gordon signalled to Diana.

"Perhaps it isn't considered proper for workers to accept bribes from members of the royalty," she suggested. "Usually it is the other way around. The males and females are generally fed by the workers."

Just then he noticed a strange tapping on his head and discovered that one of the tiny workers was trying to communicate with him. Gordon didn't have the slightest difficulty in decoding the message, which was something like this: "Your odor seems to be almost the same as ours. Nevertheless, you smell like a spy. We workers can't be sure whether we ought to kill you, so we have sent for some of the guards. They will be here soon. Wait until they arrive." Then the spokesman moved along with the line of march, as if nothing unusual had happened.

Forcing his way through the coterie of six-leggers that surrounded Diana, Gordon faced her and spoke to her thus: "This looks bad to me. They have sent for some of those big-headed soldier ants to look us over. There must be something wrong with our body odor. Those warrior ants are ruthless beasts. They will probably tear us to pieces first and then hold a post-mortem to find out whether or not we were O. K. We'd better get out of here while there is still a chance."

"But how are we going to escape?" she asked. "We are completely surrounded by hostile ants—millions of them."

"Perhaps I can fly away and carry you with me," he suggested. "I shall now try out my wings to see if they are in working order."

He had no sooner started to spread his wings than he was pounced upon by a score of the workers. They didn't hurt him, but they held him so tightly that he could hardly move. He folded his wings and immediately they let go of him.

"I guess that idea wasn't so hot," he signalled to Diana.

"I'm afraid not," she responded. "And if we try to force our way out by crawling we will walk right into the mandibles of the soldiers."

"Then I suppose there is nothing to do but wait."

At that instant they both detected a series of alarming odors. There were many different scents but they seemed to be combined to form a sort of smell image, just as patches of light and shadow are grouped together in a visible image. The impression created in their minds suggested a pack of ferocious monsters rushing forward, intent on destroying them. The very air seemed charged with anger and hatred. Instinctively they realized that these terrible creatures were in no mood for investigation or deliberation. "Kill! Kill!" was their slogan.

SUDDENLY Diana remembered something which her father had told her years before. "Quick!" she tapped out briskly on Gordon's head. "Play 'possum! Pretend you are dead! It is our only hope!"

A split second before the would-be executioners reached them, Diana and Gordon rolled over on their backs, drawing in their legs and holding their bodies stiff and motionless.

The ruse worked. Over their inert forms the warriors tramped, paying no more attention to them than if they had been a couple of pebbles.

Breathlessly the two adventurers waited there, not daring to raise a foot or wiggle an antenna. They were close to the center of the column, which was over six feet in width and was almost immeasurable in length. Over them and around them swarmed the burdened workers, massed together so closely that there was hardly a hair's breadth between their shiny, black bodies.

When it seemed as if the ant-humans could endure the suspense no longer their antennae caught a fresh and extremely unusual smell-image. Approaching them, in the center of the column of marchers, was a creature so different from the workers and the soldier ants that it might easily have been taken for an insect of an entirely different species. Its gaster was enormously distended—so much so that it could hardly drag itself along the ground and had to be assisted by scores of dutiful workers who surrounded it on all sides, helping it over all obstacles, feeding it with regurgitated food and cleansing its body constantly.

"That must be the Queen-Mother," Gordon thought. "Perhaps if we stay close to her we will be safe."

Cautiously he crept to Diana's side and signalled this suggestion to her in the antenna language. Apparently the idea appealed to her for she suddenly came to life and scampered after the Queen's retinue, which had already passed. Gordon followed close at her heels.

The miracle had happened! For the time being, none of their companions molested them or paid any further attention to them.

As they hurried onward in the wake of her royal highness, Diana remarked to Gordon, "Isn't she glorious!"

"Glorious?" he echoed. "Who is glorious?"

"Why our marvelous queen-mother, of course."

"I don't see anything glorious about her. To me she seems monstrous—monstrous and pitiful. She's nothing but an enormous, bloated egg-laying machine. What an outrage it is to compel that poor creature to drag her unwieldy body along on a grueling march like this!"

"Don't waste your pity on her. She loves it!" Diana assured him.

"How do you know that?"

"Because I envy her! How wonderful it would be if I could become a queen-mother like her!"

"What in the world are you raving about?" he demanded.

"I am not raving. I mean it with all my soul. Just think! All the members of this great army—soldiers, males, females, workers, larvae, eggs—millions of them—all are her children! Every last one of them came from that marvelous body of hers! If I could only be like her and become the mother of a great nation like this!"

GORDON, of course, thought she was jesting. He couldn't believe she was serious. Little did he then realize that the cumulative instincts of ages were concentrated in Diana's ant body, developed with such power that they overwhelmed her human will, which strong as it was, became feeble in comparison.

Yater on he was to learn how formidable and perilous those fundamental, deeply rooted ant-instincts really were.

CHAPTER VI

War with the Mushroom Growers

WHEN Diana first hinted that she was contemplating forsaking her human form permanently in order to fulfill the destiny which her ant body had imposed on her, Gordon failed to appreciate the full horror of the situation. One reason was that, although he himself was conscious of strange, atavistic urgings, they did not alarm him, since his virile, human will was able to hold these instincts completely in abeyance.

This can easily be explained. Among the ants, the male is relatively insignificant. Only one instinct, namely that of mating, is strongly developed, and even that is permitted to function only for a very brief period in the lifetime of the individual.

The virgin queen, on the other hand is a veritable storage battery in which are accumulated all the intense and mighty traditions which have been developed and passed onward by myriads of female progenitors for ages past.

But though Gordon didn't understand Diana's yearnings, they disturbed him nevertheless. In an effort to divert her mind from the monstrous egg-laying machine which seemed to have cast such a potent spell over her, Gordon made a suggestion to her:

"Let us crawl out near the edge of the column and see what the police ants are doing. I do not think they will harm us now. We seem to have acquired the correct smell."

Diana signified her approval by plowing recklessly through the crowd of Lilliputian insects that surrounded her on all sides.

Soon they reached the soldiers, who formed a living wall, hedging in the non-combatants and protecting them from any enemies that might be encountered. Though they were much smaller than the males and females, they were considerably larger than the workers. Their enormous heads were almost square and were armed with sharp-pointed mandibles.

Gordon noticed that every once in a while a few of the soldiers would detach themselves from the main column and would scamper away, only to return again in a short time. Considerable excitement was created when one of these scouts brought back the story that it had discovered a large and populous nation of farmer ants.

Just how Gordon himself acquired this information he did not know. The very air seemed charged with the glorious news. Like an international radio broadcast it was quickly picked up and relayed throughout the entire driver army.

Without delay, tens of thousands of the soldiers separated themselves from the main body, marching in serried ranks with military precision and leaving the workers on that side temporarily unguarded.

"Come on, Diana!" Gordon tapped out excitedly. "Now is our chance to escape!"

"Who wants to escape," she came back at him. "I came on this expedition to get knowledge and excitement and it looks like the fun is only just beginning."

"But, Diana," he started to protest with his antennae.

"Don't be such a wet blanket," she interrupted him. "Come along! Let us join the raid and see what the inside of an ant-nest looks like."

Before he could communicate with her any further she was off at a brisk scamper and Gordon had to hurry to catch up with her.

Soon they reached the alien colony. The Drivers were masters in the strategy of surprise but their attack, sudden and unexpected as it was, did not catch their victims entirely unprepared. Surrounding the hill, several thousand of the farmer-ants had already formed a circle of grim, determined fighters.

But they were no match for the Army Ants, either in numbers or ferocity. Hopeless as they must have known their cause to be, they all fought on fearlessly and courageously, selling their lives as dearly as possible in their self-sacrificing efforts to delay the invasion.

WITHIN a few seconds all those valiant defenders were literally torn to pieces and the remains of their bodies had been carried away by clean-up squads of small Legionary workers.

This pitiful obstacle being removed, the soldiers swarmed inside the formicary.* Only a relatively small portion of the army—similar in size to a regiment—was detailed to invade the nest. They seemed to know instinctively how many would be required to do the job right. Others remained outside, surrounding the portal and lying in wait for any of the inhabitants who might attempt to run away. Because of their large size, the two ant-humans had some trouble forcing their way through the gate of the ants' city.

Head first, Diana crawled down the perpendicular walls of the passageway and Gordon followed close behind her. They had penetrated a considerable distance and had passed several side-corridors in which furious battles were taking place, when Diana stopped and began to explore the wall of the shaft with her feelers. Then she attacked the earth with her mandibles, opening up a breach leading to a large, vaulted chamber.

The floor of the room was covered with a thick layer of compost on which was growing a peculiar kind of vegetation. It resembled mushrooms except that the stalks were long and tenuous and were covered with round nodules like turnips. When the two intruders made their unceremonious entrance into the fungus garden they surprised a few of the Farmer Ants who were busy masticating particles of leaves which they were adding to the compost bed.

Immediately the workers gave the alarm, by beating their heads against the floor and walls of the chamber. Then they hurled themselves upon Diana. They were like mice attacking a full grown cat, but they tried to make up for their lack of size and numbers by the fury of their onslaught. With horrible ruthlessness, Diana snapped at them right and left. At each click of her terrible pincers one of the brave gardeners lay mangled and motionless on the floor.

When she had disposed of all her adversaries, she turned her attention to the mushroom beds, walking carefully over them and licking some tiny squash-shaped objects which lay on top of the fungus.

Gordon drew near to find out what she was doing. By some strange sense-impressions, consisting principally of smells, he learned that the vegetation was covered with small, pale grubs which were browsing on the nodules like lambs in a pasture.

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* Ants' nest—Ant Hill.

"Aren't they sweet?" Diana signalled to him. "I am going to adopt all of them. I must stay here and protect them, so that those nervy farmer-ants don't steal them away from me."

"Please don't joke," Gordon beseeched her.

"I'm not joking. These children all belong to me, I tell you. I found them didn't I? And what a wonderful start this will be for my new colony—the nation of which I am to be mother and queen. Soon these lovely antlets will become fine workers. They will bring me food and take care of me so that I won't need to do anything but lay thousands and thousands of eggs."

"But, Diana——" he started to protest.

She didn't let him get any further.

"Don't try to talk me out of it. I know what I want and nothing can stop me!"

IT was then that Gordon realized clearly the ominous truth: Diana was in frightful danger. And of all the perils that beset her the most egregious one of all came from within herself. If he was to save her he must find some way of appealing to that tiny spark of human consciousness that was being stifled and engulfed by the flood of powerful instincts stored within her female ant-body.

His problem was complicated by the arrival of the Farmer-Ant reinforcements. Hundreds of them came swarming through an opening on the opposite side of the cavern from the place where Diana and Gordon had entered. With the same fearless courage, which had characterized the fighting of their comrades, they flung themselves upon the huge bodies of the two ant-humans.

Gordon hated to use his powerful mandibles on any of these brave heroines who were only trying to protect their own property, but he realized that this was a case of kill or be killed. Following Diana's example he fought back with all the fury of a parent defending its young.

Singly or in small numbers, the tiny, poorly armed Farmer-Ants could do no serious harm to Diana or Gordon, but it was a different and far more menacing story when hundreds of them charged upon the intruders from all sides.

Gordon tried to get Diana to retreat with him through the breach which she had made on entering, but this she refused to do.

"I shall not desert these babies!" she seemed almost to scream with her excited antennae. "They are mine, I tell you! To keep them I shall if necessary fight the whole world!"

There was no recourse for Gordon but to remain and do what little he could to protect Diana.

In a few seconds both their bodies were completely mantled in thick blankets of frenzied, militant Farmer-Ants. They snapped at the legs and the antennae of the two Drivers. They swarmed over the huge gasters, searching for openings between the overlapping segments of the chitin armours.

Gordon felt a sharp pain in the region of his neck and suddenly realized that five or six of his opponents were busily gnawing away at the slender joint between his head and his thorax, in an attempt to decapitate him. He managed to dislodge the would-be executioners with his forelegs but their places were immediately taken by a dozen others. Realizing that Diana was exposed to a similar danger, he drew closer to her and began to pick off, one by one, the ants which clustered about her neck. At the same time he used his forelegs to good advantage in keeping his own head from being chewed off.

Their plight was desperate. The two

Drivers could not hope to slay all their enemies. Sooner or later the tiny fighters would succeed in amputating their legs or in reaching some vital spot with their mandibles and that would be the end of the adventure.

When it seemed as if they could hold out no longer, a faint but powerfully welcome odor was wafted to their antennae. It was the fetid scent of the Driver-soldiers.

The Farmers must have smelled it too, for they stopped fighting for a brief interval and gathered together in groups with their heads toward the center, like football players in a huddle. Gordon took advantage of this truce to drag Diana's unwilling body an inch or so closer to the hole through which they had entered. But before he was halfway there, there came flowing through the opening a river of shiny black bodies.

A few of the Farmers tried to run away but most of them held their ground valiantly.

The battle was short.

It seemed but a few seconds, before every last one of the Farmers had been slain and their mangled bodies had been carried away. Leaving a dozen or so on guard, the main body of the soldiers filed through the other entrance of the chamber in search of more enemies to conquer.

Soon their places were taken by a squad of small workers who proceeded to remove the larvae of the Farmer ants. Diana protested indignantly, trying to make good her claim of ownership. She even went so far as to snap with her murderous mandibles within a hair's breadth of some of the Driver workers; but the soldier-guards soon put a stop to that.

One of them, who seemed to be a sort of officer, approached Diana, speaking to her sharply in the antenna language: "What are you doing here? Your place is among the young and the other virgins. What right have you to desert your post? Hurry back where you belong before you get hurt!"

Much to Gordon's surprise, Diana accepted her soldier-sister's authoritative orders without question. Quietly and meekly she crawled up the passageway that led to the surface and Gordon followed close behind her, fearful to let her out of his sight.

CHAPTER VII

The Living Ark

WHEN Diana and Gordon emerged from the city of the Mushroom-Growers the army of the Drivers was already on the march. She hastened to rejoin them, but he tried to detain her.

"Let us wait a while," he suggested. "Let us listen. Let us smell. Let us try to find out if the doctor is on the job."

"Spiders on that old bald pate of his!" was Diana's disrespectful response. "Why should we bother with that old doctor? Are we not having a glorious time right here?" And away she scampered.

Gordon did not dare to let her get too far away, but he lingered long enough to explore the air with his antennæ and to listen intently with his chordotonal organs.* He thought he caught a whiff of a strange odor, but could not be sure it was the scent which Thurston had agreed to use as a signal. The only unusual sound he could distinguish was a bugle-like note, totally different from that of the doctor's whistle. Though he didn't identify it at the time, he learned later that it was the call of an elephant.

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* These are supposed to be auditory members in insects. They are variously situated on their bodies.

Diana's body was already surrounded by a flood of marching workers, and Gordon had to tax his legs to their utmost to catch up with her. Once he was in the midst of the army, all other sounds and all other smells were completely smothered by the loud noises and the odoriferous emanations of his companions.

The way led along the floor of a steep-walled ravine. To Gordon it looked larger than the Grand Canyon of the Colorado, but in reality it was only a shallow gully.

After a while an ominous noise came to his auditory organs. Though it wasn't particularly loud it had a strange depth and intensity which made it audible even above the rustling and stridulating of the vast emmet army.

It sounded like a great wind blowing through distant vegetation. Gordon glanced upward at a forest of elephant grass which seemed almost to touch the sky. It was as motionless as death. Not a blade swayed or trembled. Then, without further warning, there was a blinding flash, followed by a deafening detonation. A tropical thunder-storm was upon them! Soon another sound was added to the rumbling of the thunder and the howling of the wind. It was the terrifying roar of a rapidly approaching torrent.

There was not time enough to race for higher ground. Before any of the ants realized what had happened a wall of raging water plunged over them.

Gordon struggled to the surface to find himself in a spinning whirlpool of black bodies. In vain he searched for Diana. She had disappeared as completely as if the deluge had swallowed her.

As he tossed and plunged and spun along with the swirling torrent, he became the nucleus of a living raft formed from the bodies of worker ants who clung to him on all sides. At first he tried to dislodge his companions, but he soon realized that this was part of an ingenious ant-plan to save them all from drowning. Other living balls of insects were forming all around him. When two of them touched each other, they combined forces, forming themselves into a larger cluster. It wasn't long before all the ants who had managed to survive the first mad rush of the waters were consolidated into one enormous ball which must have contained at least a cubic yard of insects. It was a veritable ark—formed from the living bodies of the survivors.

Thus clustered together, the Driver army was admirably equipped to weather the storm. Thanks to the air spaces between the bodies of its insesct components, the ball floated high in the water. It rotated slowly, and the ants on the outside were constantly crawling toward the center and being replaced by others. Consequently no single individual or group of individuals was submerged long enough to cause drowning or even to produce serious discomfort.

AFTER the ant-ark had navigated for a considerable distance down the stream, it reached a place where the canyon widened and the water began to flow more smoothly. Finally it touched land. The ants on the outside of the ball caught hold of the twigs of a thorn-bush and anchored the craft to the shore. With the orderly discipline of a well-trained army disembarking from a transport, the ants flowed out of the living ark and swarmed over the ground.

The spot where they landed turned out to be an island. It was so small that the enormous host had to stand on top of each other, three or four deep, in order to keep from being crowded back into the water. Gordon could see the green wall of mangoes which marked the nearest shore, and he estimated it to be about five feet away.

At a cape which jutted out a trifle further than the rest of the island, he noticed that something unusual was happening. One of the soldier ants grasped a tiny twig in its forelegs and pushed it ahead of her into the water. Then another ant took hold of the first one, grasping her gaster between her mandibles and holding a second piece of wood with her legs. In similar manner a third ant with its improvised life preserver added herself to the other two.

Soon there was a long line of floating ants anchored to the island and thrusting out at an angle toward the mainland. At last the backwash of the current caught the front end of the line and swept it toward the shore.

Thus was formed a living pontoon bridge, across which a continuous line of workers laden with eggs and larvæ began to file. Among the Ant-People, as among humans, the rule was to save the children and the weakest members of the community first.

Gordon watched while the enormous Queen-Mother was led to the water's edge. She attempted to cross on the single line of living pontoons, but they sank out of sight under her ponderous weight.

With remarkable rapidity two more lines of floating soldiers formed along the upstream edge of the first one. Clinging together in three compact rows, they formed a bridge that was buoyant enough to support the heavy bodies of the Queen and her large, virgin daughters. Several of the males also crawled across the living, floating road. Gordon wondered why they didn't use their wings to fly across the stream. The question was answered by his own ant instinct. The flying apparatus of the male ant is reserved exclusively for that momentous day when, at the word of command coming from some unknown, mysterious source, he must wing forth in quest of a mate belonging to another nation of Drivers.

Gordon loitered behind, hoping that, as the ants crossed the bridge in single file, he would be able to locate Diana. More than a hundred of the females passed over to the mainland, but the one he sought was not among them.

Tortured with foreboding, he held his post until only a handful of the big-headed soldiers remained on the island. All hope deserted him. He was forced to conclude that Diana had either drowned or had become separated from the rest of the Drivers. Without the protection of the alert and redoubtable guardians, she would undoubtedly fall an easy victim to the host of predatory birds, entomophagous* animals and giant spiders which haunted the brush.

Since there was nothing else for him to do, he scrambled over the bodies of the living pontoons. He had scarcely started across the bobbing bridge when the end which had been fastened to the island was cast off. Swiftly and smoothly, the entire bridge was hauled in to the opposite bank. Then the rain stopped abruptly and the sun began to glare down balefully on the sodden earth.

Though all the Drivers, except the males, were stone blind, they seemed to be extremely sensitive to light. They scurried hastily for the nearest shade.

IN some mysterious manner the confused, milling mob of insects reorganized into a column of orderly, well disciplined marchers. On they went in the usual formation—small workers, virgin queens, males and Queen-Mother in the center, hedged on both sides with stalwart walls of square-headed police-guards. Unerringly they picked out a winding path which followed the scant shade of the thorn shrub and elephant grass.

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* Insect-eating—adjective qualifying insects and animals which feed on insects.

Soon they reached a cleared region where, for what seemed like an enormously long stretch, there was not a particle of cover or shade. It took Gordon a considerable amount of speculation to figure out that this remarkable stretch of bare ground was a road built by human hands. Drenched in blistering sunlight that meant death to the baby ants and their tiny nurses, this roadway seemed to be impassable.

But the self-sacrificing and ingenious soldiers had been trained to overcome greater obstacles than this. Without a moment's hesitation they began to cluster together, forming with their well-armored heads and bodies a covered runway or bower. Through this living tunnel the workers with their charges filed, amply protected from the injurious effects of the sunlight.

Thus the army reached the shelter of a dense growth of palms and pawpaw trees. Even there, however, the heat was intense and there were several clearings, where the living tunnels had to be rebuilt.

Finally the order came to halt. Who issued the command, no one seemed to know. Yet every last individual in the entire army recognized it and obeyed it instantly.

The place selected for the encampment was a fork in a broad branch which stretched out horizontally a few feet from the ground. Some of the soldiers climbed the trunk and formed themselves into living ladders which hung from the bought to the ground, making it easy for the workers to climb up to the camping place.

In a short time the entire army was clustered together in a large ball, somewhat similar to the ark which had saved them from the flood.

Intent on his search for Diana, Gordon started to explore the improvised home. He was astonished to discover that the interior of the ball was constructed very much like the nest of the Farmer-Ants. There was one main entrance and shaft, from which a large number of other passageways branched off in all directions. Throughout the structure were rooms of various sizes in which eggs, larvæ and pupæ were already laid out in neat, orderly rows. In the very center of the sphere was an extra large, vaulted chamber which Gordon discovered was the throne room. Here the Queen-Mother, surrounded by those whom we may term her courtiers, was busily at work laying eggs in amazing profusion. Hovering around her was a host of solicitous attendants and nurses. They fed her generously with food regurgitated from their crops, they shampooed her head and body with their soft, spongy tongues, they brushed and cleansed her thoroughly from the tips of her mandibles to the end of her gaster. Others picked up the tiny, elongated eggs as soon as she laid them, hurrying away to deposit them in the chambers especially designed for that purpose.

Finally Gordon made his way to the exit and crawled outside. He had hardly reached the open air when he became conscious of a distinctively powerful odor. It was unmistakably the same scent which he smelled that morning when he and Diana had crawled up on Doctor Thurston's boot.

He listened.

ABOVE the turmoil of the ant bivouac he distinguished faintly the sound he had hoped to hear—the organ note of Dr. Thurston's whistle!

Torn between the pangs of sorrow and the exultation of joy, he was almost on the point of hurrying off in the direction of the sound and the scent when he realized that, much as he longed to resume his human form, it was out of the question for him to do so until he had either found Diana or had convinced himself beyond the shadow of a doubt that she was dead. Despite his pessimistic forebodings, he hung desperately to the wan hope, that in some miraculous manner she had saved herself from the flood and was concealed somewhere in that gigantic maze of living insects.

For these reasons, he held back. He didn't care to move a step closer to the safety of Thurston's boot. Suppose the searching doctor happened to recognize him and carried him back to the laboratory? If that occurred it would undoubtedly mean that Diana would be lost forever. Even if she were still alive, her powerful ant-instincts would prevent her from returning voluntarily to human existence.

And so Gordon crawled back into the nest of living bodies and spent the entire rest period in a futile hunt for the insect which had engulfed the soul of his beloved Diana.

CHAPTER VIII

Big Game for the Hunters

WHEN the shadows began to lengthen and the sweltering heat of the jungle was somewhat mitigated, the word went forth for the ant-army to take up the march once more.

On they went through the brush—fear clearing the way before them and death following in their wake. It must have been close to midnight when some of the scouts, who had been sent out to reconnoiter, came back to the main column with exciting and glorious news. They had found an enormous animal—much bigger than any which the Drivers had previously conquered. It was either asleep or was seriously wounded, for it had not run away with the alert, active creatures—which invariably fled as soon as they caught the scent of the Drivers.

Eagerly the ferocious warriors formed themselves in serried ranks and marched in the direction indicated by the scouts. After them filed the workers and the other members of the colony.

By the light of the tropic moon, Gordon saw looming up ahead of him a huge, dark grey mountain. It was some time before he could convince himself that it really was a full grown elephant.

Apparently it was asleep for it permitted nearly the entire army to swarm over its body before it became aware of their presence.

Gordon remained on the ground close to the elephant's head. He noticed that the outside of the trunk was black with the soldier ants and that some of them were crawling up inside it.

Considering how sensitive the interior of an elephant's trunk is, it was not surprising that the great beast awoke, as soon as the ants began biting pieces out of the trunk's tender, mucous lining.

With a trumpet of pain which made the jungle reverberate, it started flailing around with its trunk. Many of the ants were killed, and Gordon sickened at the thought that Diana might easily be one of the victims. Those of the army who were not slain hung on grimly as the giant pachederm went lumbering through the brush.

At its best the eyesight of an elephant is poor enough. This hapless beast was completely blinded by the relentless insects which swarmed over its eyes.

Howling with anguish, the elephant crashed into large trees, tripped over fallen logs, and stumbled into steep ravines.

It wasn't long before it had broken

two of its legs and was so battered, from its collisions with immovably ponderous tree-trunks, that it fell floundering to the ground.

That was the beginning of the end.

Reinforcements quickly arrived to replace those of the attackers who had been killed. Soldiers were joined by workers, who, tiny as they were, did their part in vivisecting the great beast.

Gordon, of course, did not participate in this grewsome work. Most of the time he spent in what seemed to be a hopeless search for Diana. He was almost ready to give up in despair when a happy inspiration came to him.

By repeated experimentation he had learned that he could not make any loud sounds with his mouth, but at the base of his abdomen where his gaster joined his thorax, there was a remarkable apparatus for producing noise. Scientists call this musical instrument the stridulatory organ. It consists of a rough, file-like surface against which is scraped the sharp edge of the ant's postpetiole*. This produces a shrill, rasping sound which can be heard at a considerable distance by the chordotonal organs of insects.

Gordon had made frequent use of his stridulatory organ, hoping Diana would recognize some distinguishing quality in it. But it was impossible to vary the pitch and the tone he produced was practically the same as those characteristic of the other male ants.

He found, however, that he could easily control the rythm of his stridulations. Finally he thought of sending out a series of notes which would be recognized as coming unmistakably from a human being. The signal he decided on was the final flourish which practically all tap dancers use in ending their performances: Translated to radio dots and dashes it sounded like this: Dash, dot, dot, dash, dash. Rest, dash, dash.

SEVERAL times he repeated this call, stopping each time to listen for an answer. Finally it came: "Dum ta ta dum dum. Dum dum!"

He hurried in the direction of the sound, stopping a few times to send out the call and to wait for the reply.

Finally, when she was close enough so that he could make out the yellow cross which Doctor Thurston had painted on her gaster, he knew that it was indeed his loved one.

To Gordon this reunion was fraught with intense joy, but Diana didn't seem at all thrilled about it. She greeted him in a perfunctory manner and immediately began to chatter, not about their human problems, but concerning the affairs of the emmet nation.

"You'll have to excuse me," she prattled. "I am dreadfully busy. I have heard some wonderful news. Just before the elephant fell for the last time, it crashed into a termite's nest or termitarium, and made a large breach in it. One of our scouts discovered it a few minutes ago. An expedition is now being organized to raid the stronghold. I have often wondered what the inside of a termitarium is like and this is my big chance to find out. So long! I'll be seeing you!"

"Wait a minute!" Gordon signalled. "Now that I've found you, I can't let you leave me again. This may be our only chance to escape. We must search for Doctor Thurston at once, so we can get back to our human bodies again."

"Beetle feathers!" she said scornfully. "What do I care about that old fossil? What do I care about that worthless human body that used to be I? Now I am a queen! A queen ant! And I love it, I tell you! I love it!"

"Please don't say that," he beseeched her.

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* A little stalk on the ant's body between thorax and abdomen.

"Oh doodle bugs! I haven't time to argue with you. There goes the gang to raid the termitary. That's a lot more important to me than all your human nonsense. Good bye!" And she scampered toward a detachment of the ant army which had separated from the main host and was marching away in a regular, orderly column.

Gordon hurried after her.

When he came within signalling distance he said, "If you insist on doing this foolish thing, I am going with you."

"Suit yourself," was her only reply.

CHAPTER IX

The Attack on the Termite Monsters

THE wrecked termitarium was a marvelous edifice. By comparing its size with the thorn bushes which surrounded it, Cabot estimated that it was at least eight feet high and covered an area of several square yards. Measured in proportion to the size of the tiny insects which had built it, this undertaking was comparable to a man-made structure several times as large as the Empire State building in New York.

Already a large amount of the damage caused by the stricken elephant had been repaired. Gordon could make out the forms of hundreds of small, pale insects who were rapidly filling the gaps in the walls with a cement-like material which they seemed to be manufacturing from their own bodies. The termites were soft and translucent. Devoid of chitin or other protection, unequipped with fighting weapons, they appeared to be as vulnerable as baby grubs.

Scenting this delicious and seemingly defenseless prey, the Driver warriors rushed to attack them. The termites continued to labor hurriedly but calmly until the ants were but a few inches from them. Then, as if by magic, all the soft, white bugs disappeared.

Their places at the breaches in the walls were instantly taken by a band of preposterous creatures.

The newcomers were termites of the soldier caste, differing from the grub-like workers as much as a crocodile differs from a rabbit. They had been developed and reared solely for fighting—and what fighters they were!

Cabot got a good look at one of them, which was only a short distance away from him. All he could see of it was a monstrous, preposterous head. Black in color, this head was heavily armoured and was equipped with a pair of enormous, murderous-looking mandibles, resembling the pincers of a lobster.

With characteristic temerity, the leaders of the Driver army hurled themselves into the jaws of these formidable defenders. The carnage which followed reminded Cabot of a band of naked savages being massacred by a battery of machine guns. Each time the murderous pincers of a soldier termite crunched together, six or seven of the attackers were permanently removed from the fray. Soon the ground in front of the broken termitary was heaped high with the mangled bodies of the slaughtered ants.

When Diana reached the main column of the army, she charged forward with the others. Gordon managed to get in front of her, impeding her progress like a football player blocking interference.

She stopped long enough to say, "Get out of my way, you clumsy fool!"

"Wait!" he implored her. "Don't try to storm that termites' nest. It is suicide! The ants haven't a chance!"

"Traitor!" she shrieked. "Let me go, I tell you."

"You don't know what you are doing," he told her. "You can't see those terrible termite warriors. I have eyes. I can see them."

"I don't need eyes. I can smell them. I know exactly what they are like, and I'm not afraid of them. I don't care if I do get killed. I would gladly die for the glory of our great ant nation."

An inspiration coming to him, Cabot asked, "What about your ambition to become the mother of a great nation? You can't expect to accomplish that wonderful achievement if you get yourself killed before your wedding day."

This appeal made her pause. "Perhaps you are right," she conceded. Then, after a moment's hesitation, she added, "But, after all, my first duty is to my own sisters. I must do what I can to help them, even if it means sacrificing my life." And she started off toward the termitary.

She had almost reached the nearest termite soldier when Gordon intercepted her again.

"Listen, Diana," he commanded her. "Let me go first. I have figured out a way to lick that termite. If my plan succeeds it will make it possible for you and your sister ants to enter the termitary without any more sacrifices. Won't you please wait here until I try out my scheme?"

"ALL right. Go ahead and get yourself killed for all I care." With brutal bluntness, she added, "You are getting to be an awful nuisance. Perhaps this will be a good way to get rid of you."

In reality Cabot had formulated no definite strategem. His mythical plan was merely a stall, invented on the spur of the moment to deter Diana from rushing to destruction. Now he realized he would have to do some quick and superior thinking in order to make good his promise.

He tried to remember something he had once read about termites of the soldier caste. If his memory served him well, the defending warriors were invulnerable only when approached from the front. The termite nearest to him was standing with most of its body inside the narrow corridor of the stronghold and with only its formidable head protruding from a crack in the wall. Peering into the shadows with his sharp eyes, Gordon was able to distinguish the faint outlines of a gaster which was ridiculously small in proportion to the head and which seemed to be soft and unarmoured like the bodies of the worker termites.

He also observed that, regardless of the number and position of its foes, the creature's terrible manibles opened and shut with the rythmic regularity of a pendulum, as the warrior turned its head from side to side. It was quite apparent that the termite was blind.

Perhaps—

Crouching just out of range of the monster's jaws, Gordon waited until the termite was occupied in exterminating an unusually large band of ants which had rushed at it. Then, just as the mandibles closed on a dozen of the attackers, Cabot sprang with all his might. His first leap landed him in the midst of the squirming victims. Before the jaws had time to open, he jumped again, this time alighting on top of the termite's head. There wasn't much room between that head and the roof of the passage way, but Gordon managed to squeeze through far enough so that he was within reach of the unprotected body. With the ferocity of of a mongose attacking a cobra, he sank his mandibles into that soft thorax.

He expected a terrific battle. Much to his surprise, the warrior which had seemed so pugnacious from in front, gave up instantly and expired without a struggle.

Seeming to realize their opportunity, scores of ants rushed forward, grasped the dead body of the termite fighter and dragged it outside. Through the opening thus left undefended, hundreds of the attacking ant army swarmed.

Cabot hurried to repoin Diana. True to her promise, she was waiting for him at the spot where he had left her.

"Good work, comrade!" she greeted him. "We'll make a real ant out of you yet."

"Thank you, my dear," he responded, "but I've had quite enough of bug life. It's high time for us to think of regaining our human forms. Let's go."

"Go where?"

"Back to the dead elephant where the main army is camped. Doctor Thurston will probably be there searching for us there and signalling to us."

"Let him signal his head off for all I care. I'm going to find out what's inside that termite's nest." And she trotted toward the crack through which the ants were swarming.

"Please don't!"

"Beetle feathers! Don't be such a butterfly. This is a chance that comes only once in an ant's lifetime. Come on —unless you're afraid to escort me!"

This taunt took all the augmentation out of Gordon's system. Meekly, but with pessimistic foreboding, he followed her as she crawled through the opening and scampered along the dark corridor of the termitarium.

THEY hadn't gone far when they encountered a file of ants who were hurrying in the opposite direction. It was quite apparent that something had frightened them, so much so that they were retreating to the open air in a panic-stricken mob.

Diana stopped and turned to Gordon. "What can be the matter with them?" she wondered.

"It must be something unspeakably frightful," Gordon surmised. "Those same ants were ready to attack the termite soldiers and to sacrifice their lives without a suggestion of fear. Whatever frightened them must be a lot worse than the big-heads."

Guided by their smell images, Diana and Gordon noticed that some of the fleeing ants were clutching frantically at their faces with their front feet while they tried to keep up with their companions by running with their remaining four legs. Others seemed to be almost paralyzed, being barely able to drag themselves along.

One of the Drivers, apparently uninjured, was carrying in its mandibles the body of another ant which was too far gone to help itself.

"Come on, Diana," Gordon signalled. "Let's retreat to the open air while the way is still open."

But Diana, obsessed by an overpowering curiosity which was inherent in both her ant body and her human soul, insisted on lingering.

Soon the last of the fleeing ants had passed them and had disappeared in the direction of the exit. Diana and Gordon were alone in the dark, perilous tunnels of that strange and hostile city.

"Let's get out of here!" Gordon repeated, as he grasped her head with his mandibles and tried to drag her back to safety.

"No!" was her determined declaration. "After coming this far I'm certainly not going to quit now. There's something in there—something strange —something mysterious—and I'm going to find out what it is. Are you coming with me, or shall I go alone?"

Gordon didn't answer. He merely released his hold on her head and crawled cautiously along the narrow passage-way which led into the very bowels of the enemies' stronghold.

CHAPTER X

The Poisoned Shroud

AS Gordon crept stealthily onward he sensed that Diana was close behind him. He could even feel the soft hairs of her antennæ brushing against his gaster. He tried to concentrate all his attention into those wonderful organs of smell which were located at the tips of his feelers.

Many scent-images were wafted to him—some of them familiar, others so strange and weird that they baffled interpretation.

Presently he came to a dead ant. With his feelers, he examined the body carefully. It seemed to be complete, with no members missing or injured, but it was doubled and twisted in a manner which indicated that it had died in agony.

Gordon turned to Diana and started to signal to her, but before he could once more beg her to retreat, she interrupted him with: "Come on, boy! Steady! Don't lose your nerve now! Never mind that corpse! What's a dead ant more, or less? We must advance! We must find out what killed our sisters!"

So Gordon squeezed past the fallen ant and pressed forward into the perilous tunnel.

They came upon several more murdered ants, all of them lying in cramped attitudes denoting that their last moments had been passed in excruciating pain.

Then the passage-way widened and Cabot caught a clear smell-image of a most preposterous creature. Like members of the termite family it had six legs, but that was about the only resemblance it bore to any other species of insect.

It seemed to have no jaws, mandibles or any other features which even remotely suggested a face. From the clear impressions which were carried to his antennæ, Cabot deduced that the head of the monster was as heavy as all the rest of its body and was shaped like a retort, with a short, flexible tube protruding from the place where its face should have been. It was one of those nightmarish creatures known as proboscidian or syringe termites.

Behind this weird-looking monstrosity five or six of the soft-bodied worker termites were busily engaged in cutting off its retreat by walling up the tunnel which was the only means of reaching the interior of the termitarium.

It was quite apparent that, whether it won or lost, this lone defender was doomed to be sacrificed for the good of the termite community.

Taking advantage of the widened passageway, Diana pushed past Gordon and took up a position directly in front of him.

For an instant she stood there, sniffing the stagnant air with her antennae. Then she flashed this signal to her companion:

"What a false alarm that is! It's just a bogey man, made up to frighten ignorant infants. I'm not afraid of that old rubber-head! Let's hurry or those workers will have the tunnel walled up before we can get through."

With her mandibles snapping viciously, she charged at the grotesque insect.

What happened then was like a horrible delirium.

Just before Diana came within grappling distance, the soft, bulbous head of the termite contracted and forth from the orifice a thick stream of viscous, noisome fluid squirted. Diana caught the full force of it. Her face, thorax and gaster were completely drenched by the deadly discharge.

THE glutinous fluid seemed to disable her completely, entangling her legs and paralyzing her body.

Moving stealthily, so as not to invite

another shower of poison from the termite defender, Gordon crept to Diana and grasped one of her hind legs in his mandibles. Then he backed through the narrow tunnel, dragging her writhing body after him.

Though the distance was only a few inches it seemed as if he carried his loved one for several miles before a welcome glow told him that he had reached the crack in the wall of the termitarium.

Already the fluid which covered Diana had begun to congeal, sheathing her body in a weird, translucent shroud. Fortunately she was still alive, her convulsive movements indicating that she was struggling for breath.

Frantically, Gordon attacked the noxious coating with his thick, spongy tongue. The stuff had a vile taste. It smelled atrociously. It seared the tender membrane of his sensitive tongue.

Disregarding the pain, Gordon continued to lick her body, concentrating his efforts on the spiracles which marked the openings of her tracheae or breathing tubes, on both sides of her body. Finally, with the aid of his mandibles, he managed to remove enough of the varnish-like coating so that Diana could breathe again.

Meanwhile, some of the workers from the Driver army had approached and, sizing up the situation with ant-like efficiency, set to work to remove the rest of the sheathing from their sister's body.

In a few minutes the task was completed and Diana was as energetic and as nonchalant as ever. Her first remark to Gordon was:

"Whew! Now I know how a movie actor feels when he gets socked in the face with a custard pie!"

Not to be outdone in wisecracking, Gordon came back at her with, "Next time you crash the gate of a termite's nest you'd better take a can of Flit with you."

CHAPTER XI

The Bloom of Death

ON the way back to the encampment of the Driver army, Diana stopped and began to explore the air eagerly with her antennae.

Gordon went up close to her and tried to find out what had arrested her interest.

"Do you smell that marvelous perfume?" she asked him. "Isn't it delightful?"

Cabot had noticed a strangely alluring odor and had been attracted by it, but he had not permitted it to divert his attention from his main purpose, which was to find Doctor Thurston. He tried once more to induce Diana to join him in this vitally important quest, but without success.

"I can't be bothered now," she told him. "I must find out where that wonderful fragrance comes from. It smells so sweet—like the most delicious nectar."

She started to climb up the perpendicular stalk of a plant, and Gordon followed close behind her. The perfume became stronger and stronger, until it was almost overpowering in its intensity.

Without hesitation, Diana crawled to the huge blossom from which the incense was emanating. It was a brilliant scarlet in color and was shaped like the lower end of a saxophone.

Gordon tried to overtake her and to caution her, but he was too late. Straight to the edge of the flower she scampered, thrusting her sightless head inside. An instant later Gordon lost sight of her.

Then he heard a noise that sounded like the cover of a syrup pitcher being slammed shut. Startled and horrified, he saw a lid-like portion of the flower clap against the lips of the corolla, closing the orifice tightly and imprisoning Diana within the bell-shaped receptacle.

Suddenly the explanation of this surprising occurrence flashed into Cabot's mind. Diana had been captured by an African variety of pitcher plant—one of those strange flowers which feeds on the insects it entices with its fragrance, and captures with its cunning trap-like mechanism.

As fast as he could clamber, Gordon hurried to the spot where he had seen Diana disappear. He tried to pry the lid up with his powerful pincers but was not able to budge it.

Crawling down the bulging sides of the blossom, he observed, through the translucent tissues, that the interior of the sack was partly full of liquid. From the agitation of this fluid, Gordon deduced that Diana was swimming in it, struggling frantically to get out.

With the fury of desperation, Cabot attacked the flower at a point just below the surface of the liquid. The membrane was thick and tough, but it was not strong enough for mandibles designed to pierce anything from a beetle's armor to an elephant's hide.

Soon he had chewed out a hole, through which the liquid oozed forth. Quickly and neatly he enlarged the slit until it was shaped like a hairpin, with a tongue-shaped flap projecting outward from the surface of the flower.

Gripping this projection with his mandibles, Cabot released his hold, permitting himself to drop suddenly. Gravitation did the rest. The mass of his body, falling like a dead weight, was sufficient to rip a long gash in the side of the blossom. Through this breach the liquid gushed forth until the floral pitcher was empty.

Hanging there in the direct path of the miniature waterfall, Gordon was almost anesthetized by the etherial vapors of the exotic perfume. But he managed to hang on until the torrent had ceased.

Then he started to climb up the strip which he had torn from the flower. Halfway up, he turned and looked back toward the ground. He expected to see Diana scampering away to freedom; instead of which he was alarmed to observe her motionless body lying submerged in a puddle of the lethal nectar.

Measured in proportion to his ant-body, it was a long way to the ground, but he decided to risk the drop rather than waste precious seconds crawling up the flower and down the stalk.

Thanks to his wings, which slowed up his fall, he alighted safely a few inches away from Diana. Closing the spiracles of his breathing tubes lest he, too, should succumb to the overpowering incense, he plunged into the puddle and floundered to the spot where Diana lay. Finally, by dint of strenuous exertions, he managed to pull her out of the perfumed pool.

Grasping her head gently with his mandibles, he slung her body on his back and trotted briskly away until he could no longer smell the deadly fragrance.

Then he deposited her on the grass and examined her with his antennae. Limp and motionless was her body. She did not seem even to be breathing.

REMEMBERING the rules of first aid to a drowned or asphyxiated human being, he decided, as a sort of forlorn hope, to try artificial respiration. Locating the stiomata of her breathing tubes, he pressed their sides together with his feet and then released the pressure, permitting the flexible walls of the chitin-lined trachea to expand. Rhythmically and persistently, he continued this process, pressing and releasing, pressing and releasing, until it seemed as if he could no longer move his weary limbs.

Finally, when he was almost on the point of giving up, he fancied he detected a slight flickering of Diana's antennae. The movement was almost imperceptible but it was enough to stimulate his weary body with new hope and fresh energy. Assiduously he labored, manipulating first one pair of spiracles and then another, until all of Diana's breathing tubes were functioning normally.

When she recovered consciousness, her first question was, "What happened? How did I get out of that beastly flower-trap?"

"You were lucky," Gordon told her. "You got a break."

"A break?" she questioned.

"Yes. A break in the side of the pitcher blossom. Something ripped the flower open and the liquid gushed out, carrying you with it. I found you and carried you here."

"Gordon, dear, I do believe you are fibbing. It was you that gave me the break, now wasn't it?"

"What difference does it make?" he countered. "The important thing is that you are alive and safe—at least for a while."

"For which I am very grateful to you, Gordon darling. Please forgive me for the hateful way I've treated you. I guess, after all, you are rather handy to have around."

"Now you are talking like yourself—your real self—your human self!" Cabot signalled with delight. "If you really do think I am useful to you, suppose you co-operate with me by helping me to find Doctor Thurston."

"Why must you always be bringing that up?" she rebuked him. "There is plenty of time to think about becoming human again. Meanwhile why don't you try to be a good ant and make the most of this glorious adventure?"

Diana had enough of the woman in her to avoid giving her lover any undue satisfaction—the ant-nature also affected her. Apparently her female intuition told her that something was impending.

CHAPTER XII

The Emmet Wedding Day

As Diana and Gordon were approaching the body of the murdered elephant, they were met by a detachment of Driver workers. The tiny insects, who ordinarily behaved with deliberate calmness, even when they were attacking a dangerous enemy, now seemed obsessed by a strange and intense agitation. The very atmosphere surrounding them seemed to vibrate with excitement.

Immediately they took charge of the two ant-humans, pushing, lifting and tugging at their cumbersome bodies as if it was a matter of life and death for them to hasten back to the main body of the army.

At the encampment the same spirit of feverish restlessness prevailed. Gordon noticed that all the ants had abandoned the work of dissecting the elephant's body, although it was only half consumed.

Their interest appeared to be concentrated upon the sexed members of the populous colony to the utter exclusion of all other activities. Even the enormous and helpless queen mother, who ordinarily was surrounded by a retinue of loyal maids of honor, was deserted. For the time being at least, the eggs, the cocoons and the baby antlets had been abandoned by the normally devoted nurses.

Nothing seemed to count now but those on whom the future of the race depended—the large virgin females and the winged males.

For a while Gordon was at a loss to account for this unusual excitement. Diana enlightened him:

"Don't you understand?" she signalled to him tenderly. "This is our wedding day. Soon we are going to be married. Then I shall become the mother of thousands, perhaps millions of wonderful emmets!"

"If it had been possible for an ant to blush, Gordon's black, chitin-covered face would have turned a flaming scarlet.

Diana sensed his embarrassment, and interpreted it correctly.

"Why, Gordon!" she chided him. "You silly doodle-bug you! Surely, you don't think I am going to marry *you*, do you?"

"No," he signalled haltingly. "But I certainly hope you won't marry anyone else, either. If you *must* marry an ant, why can't——"

She interrupted him with, "Don't you understand, Gordon, dear, that it is absolutely out of the question for me to marry you now?"

"Why?"

"Because you are my brother. You and I are children of the same mother."

"So are all these other males."

"Of course they are. That's why none of them will be allowed to mate with females belonging to this colony."

"Then—how—what—where—" Gordon's feelers seemed almost to stammer as he tapped out these pronouns.

She interposed: "As a man you may be wise, but as an ant you are frightfully stupid. Don't you understand what all this excitement means? We are being prepared for our nuptial flight! This is the day of days—the momentous hour when the males of all the Driver armies in this great section of the land will fly forth to seek brides of the same species belonging to colonies other than their own."

"Do you mean to say that all the male Drivers in Africa are going wife-hunting at the same instant?"

"Certainly. And that instant has almost arrived."

"Impossible!" he declared. "Such a thing could not be!"

"Why not?" cried Diana in scorn.

"Because, to do that, it would be necessary for the ants to have a method of communication equal to our human radio systems."

"What makes you think the ants haven't such a system?"

"That would be incredible. It would require complicated equipment. There is nothing like that here."

"Now you are talking like a stupid man. Human beings need a lot of machinery to communicate with each other over a long distance, that is true. But perhaps the ants are wiser than human beings. Perhaps they know how to communicate without a lot of wires and coils and tubes."

"Do you really think that?"

"I certainly do. Can't you feel it yourself?"

"Now that you call my attention to it, I do have a strange premonition that something important is about to happen."

"Of course you do. So do all the rest of our great nation. So do all the other Driver ants within a radius of many miles of us. The command has gone forth. There is nothing for us to do but obey."

"The command has gone forth, you say?"

"Certainly."

"And all the Drivers for miles around are now getting ready to obey."

"They must. All of us must obey the call."

"Then who issues the call? Who gives the command which all the ants must obey?"

"What a silly question. You may as well ask who it is that tells the seeds to sprout, the flowers to bloom and the fruit to ripen."

"BUT that is different. Seeds and flowers and fruit don't all start to perform their functions simultaneously

—at one particular minute of one particular day."

"True enough. It isn't necessary for plants to work together like that. But with the race of emmets, our very existence depends on this great nuptial flight taking place from all colonies at the same moment."

"But how is this moment determined. "Who——"

"Don't waste your time with such useless speculation," she interrupted him. "What difference does it make who issues the command and how it is transmitted? The important thing is that the call has gone out. We have all heard it and must obey it. You'd better get yourself ready. You may have a long, hard flight ahead of you."

"What do you mean by that?"

"Don't you understand? When the momentous time comes for the males to depart, you must fly forth with your brothers. Then you must search until you find a beautiful female ant belonging to another tribe of Drivers. You must marry her. And from that wedding millions of emmet children may result."

"How horrible!" he gestured vehemently.

"Why do you say that? Can't you see that this is nature's law? It is just as pure, just as sacred as the marriage laws of human beings."

"And suppose I do marry, in the way you have suggested. What then?"

Assuming an attitude which plainly indicated sincere regret, Diana signalled. "I am sorry to say that you must then die, Gordon, dear. But let us hope that your bride will live on to raise a colony. Then you will have the satisfaction of knowing that you are the father of a great nation. Isn't that worth dying for?"

"I'm not so sure of that," Cabot doubted.

Just then he felt something nudge against him, shoving him gently but firmly away from Diana. Looking down he saw thirty or forty of the tiny Driver workers crowding around him. A similar group had surrounded Diana.

Like a fleet of diminutive tugs guiding a giant liner, they pushed and pulled at his large, unwieldy body, forcefully separating him from his companion. He tried to break away from them and rejoin Diana, but his captors were so numerous and so persistent that they easily prevented him from doing this. They didn't even permit him to bid his loved one farewell.

CHAPTER XIII

The Nuptial Flight

As soon as Cabot quit trying to escape from his abductors, they became very gentle and solicitous. Swarming all over his head, thorax and gaster, they proceeded to groom him like stable boys preparing a thoroughbred for a horse-show. Some of them cleansed the hairy portions of his anatomy, using their bristly forelegs as combs and brushes. Others licked his body thoroughly, shampooing his head and massaging his legs and wings with their soft, spongy tongues.

Though he was at first inclined to resent all this attention, he found it so enjoyable that he submitted to it contentedly. Finally every speck of dust had been removed and his chitin armor was as clean and glossy as a new patent leather shoe.

When the emmet trainers and beauticians had completed their work, the commissary department of the Driver army began to function. One after the other, a group of workers waited upon him, proffering choice droplets of food which they regurgitated from their crops and presented to him with sisterly kisses.

Reflecting that this would probably be his last chance to obtain nourishment, Cabot gratefully accepted all these nutritive gifts until his own crop was full almost to the bursting point. He decided that the fresh juices of elephant meat were not such a bad diet for an athlete, about to engage in a gruelling test of strength and endurance.

Looking about him, he observed that the other male ants and the virgin females were being similarly prepared for the ordeal which clearly lay before them.

The spirit of excitement which hitherto had been confined to the ants of the worker caste, began to take possession of the sexed individuals. Some of the males unfolded their wings and tried to hop off, but the workers swarmed around them, clinging to their legs and holding them back like a mooring-crew handling a Zeppelin. They made it clear to the over-eager ones that the propitious moment had not yet arrived.

This continued for several hours, until every male and every virgin female had repeatedly been cleansed and fed.

Then, simultaneously and with a unanimity that was uncanny, the workers quit restraining their charges. Though he had been watching and listening attentively for some time, Gordon was not able to detect any motion or sound or odor that could possibly be interpreted as a signal. Yet every individual in that enormous throng of emmets, including Cabot himself, seemed to know unerringly the precise instant when the nuptial flight was to start.

Reflecting upon this amazing phenomenon, Cabot arrived at the conclusion that this selection of a time for simultaneous, wholesale marriages of many great nations must be one of the greatest mysteries and marvels of the insect world. Scientists have never been able to explain it. Philosophers and theologians have tried to account for it by inventing fantastical governing forces, such as "the spirit of the formicary," "the invisible power" and "the soul of the world"—mere jargon—which really explains nothing.

Cabot's experience as an ant convinced him that even the emmets themselves do not know who determines the moment for the flight, or how the command is transmitted to the members of the ant communities.

Of one thing, however, he was quite certain. There wasn't a single individual in the entire Driver army who did not know when the time had come. And he could only infer that the same thing was true in other colonies of Army ants.

The instant they were released by their worker sisters, the male ants took to their wings like a flock of homing pigeons and flew rapidly away. Gordon hopped off with the rest of the males, but, instead of departing, he flew around in a spiral, warming up his wings and searching for Diana.

Soon after the flight of the males, the workers deserted the virgin females, leaving them to shift for themselves. Thus forsaken by their intrepid body-guards, the emmet maidens, although they didn't seem to realize their peril, were as defenseless as infants against the innumerable foes which infested the surrounding jungle.

CROWDED together in a compact throng, they milled about and clambered over each other in their eagerness to fulfill the destiny which nature had ordained for them.

Cabot circled above the seething mob of quivering insects, striving to locate the one creature that meant so much to him. He might as well have tried to pick out one individual grain in a carload of wheat.

Suddenly an ominous smell-image was

wafted to his antennae. It was evident that the brides-elect on the ground detected it also, for their excitement became so intense that it bordered on frenzy.

The bridegrooms, for whom they had waited so avidly, had at last arrived! An instant after scenting them, Gordon saw several fleets of winged emmets approaching simultaneously from different directions.

Soon the air above him was so full of flying insects that they clouded the sky. As they swooped downward to claim their brides, they completely surrounded him, jostling him and battering him with their wings.

To Gordon, this experience was disturbing enough, but he soon discovered that a far more serious danger was impending. In the wake of the ardent emmet flyers, scores of predatory birds made their appearance. It was apparent that they had been attracted by this unusual phenomenon and had hurried to the trysting place to feast on the delicious tid-bits they knew would be waiting for them there.

Alighting in the midst of the squirming throng, the birds wrought havoc on the defenseless insects. In a few moments most of the birds had gorged themselves so greedily that they could not close their beaks. It was a veritable slaughter of the innocents!

Almost insane with anxiety, Cabot flew furiously above the scene of carnage, hoping against hope—striving to conquer his despair—searching forlornly for the one he felt certain must already be destroyed.

ALL at once, he caught a flash of yellow, resembling the mark which Thurston had painted on Diana's ant-body. Turning sharply, Gordon flew back to the place where he thought he had seen that significant cross of gold. Sure enough! There she was—alive and uninjured—just below him!

Pointing his head groundward, he glided swiftly down, alighting close to the ant which he knew harbored Diana's soul. Grasping her firmly with all six of his legs, he spread his wings and took to the air.

The heavy burden put a severe strain on his unpracticed flying muscles, but by dint of strenuous exertion, he managed to keep aloft.

As he winged away from that frightful place of massacre, Gordon heard a whirring sound behind him. Turning his head he discovered that he was being pursued by three of the birds, which evidently had not yet satiated their appetites. He soon realized that his weak, flimsy wings were no match for theirs. Rapidly they gained on him until the leader of the trio was so close that it opened its beak to snap at him.

CHAPTER XIV

The Web of Doom

AMONG his numerous other accomplishments, Gordon Cabot was a skilled aviator. As a war-ace over the French battlefields, his bold daring and matchless stunting had won the admiration of friends and foes alike.

Now, as he found himself flying once more, but with no mechanical contrivances to aid him and with no machine guns to fight off enemies which seemed far more dangerous than any he had encountered during his wartime experiences, he was surprised to discover that his knowledge of aeronautics, acquired through tedious days of study and countless hours aloft, was of incredible value to him.

By co-ordinating his wings, his mandibles and his gaster, he banked sharply, executing one of those tail-chasing maneuvers which had gotten him out of many a tight pinch during his combats with German aces.

But the birds also knew how to fly.

They quickly solved his trick and again began to overtake him.. Then he went into a series of inside loops. Though he was handicapped by his precious burden, he managed to elude his pursuers for a few minutes longer. Last of all, he dove steeply and then zoomed up into a perfectly executed Immelmann turn, thus reversing his direction of flight and, for a while at least, confusing his opponents.

All during this stunting, Gordon was drawing closer and closer to the jungle which surrounded the clearing where the elephant had fallen. Blindly he dove into a dense mass of vegetation, hoping thus to conceal himself and Diana from his pursuers.

He succeeded in escaping from the birds, only to find himself beset by a still greater danger. In his haste to elude his winged opponents, Gordon had not noticed a lacy spider web which was spread across a gap in the foliage. Before he realized what was happening, both his body and Diana's were enmeshed in the sticky, silken snare.

Gordon felt the web vibrate. Stradding toward him, its murderous fangs bared, was an enormous, horrible, hairy spider!

By a super-emmet effort, Gordon managed to wrench Diana's body out of the entangling web. When he was sure she was free, he released his hold on her, permitting her to fall to the ground. Thus relieved of his burden, he faced the ferocious spider.

Though the owner of the web had an enormous advantage, it did not seem particularly eager to close in on its prey. Instead, it circled rapidly around it, striving to enmesh him still further in the threads of silk which issued from the spinnerets in its hideous abdomen.

As fast as new strands were spun about him, Gordon severed them with his sharp mandibles. Though he wasn't able to free himself completely, he did manage to twist about so that the spider was constantly kept within sight of his keen eyes.

He watched for a moment when his antagonist became careless and came within striking distance. Making a sudden lunge, Cabot succeeded in grasping a hairy leg with his pincers. With this to brace him, he was able to tear himself away from the entangling meshes of the web and to clamber quickly upon the spider's back.

Before his surprised adversary had time to do anything about it, Gordon, using its back as an airport, launched himself into the air and flew blithely away.

His first thought was for his loved one. Taking care not to get caught in the web again, Gordon flew around searching for her.

THE ant which was Diana had disappeared!

Unable to locate her with his eyes, Gordon alighted and explored the ground with his antennae. Soon he caught the familiar odor of formic acid which told him that a Driver ant had passed that way. Thanks to his wonderful sense of smell, he had no difficulty in following her spoor. Something told him that she was moving rapidly and that he would have to hurry to overtake her.

At last he caught 'sight' of Diana's ant-body.

He had almost reached her when he heard a rustling noise, and a frightful lizard thrust its sinister, horny head out from the underbrush. The reptile scented the female ant and sped after her. Diana seemed to be utterly ignorant of her danger.

His insect body quivering with a mingling of fear and fury, Cabot leaped into the air and flew after the would-be assassin. He reached the creature just as it was about to shoot out its long sticky tongue to capture its prey.

Disregarding his own danger, Gordon hurled himself straight at the reptile's right eye, snapping with his pincers as he alighted on the creature's face. Obviously startled by this unexpected attack, the lizard reared up and made a savage swipe at him with its taloned forepaw.

Just in time to save himself from being crushed, Gordon hopped off his precarious perch and darted to Diana.

For the second time that day he wrapped his six wiry legs around her and lifted her into the air.

Despite the menace of the predatory birds, Cabot decided that his wisest course was to return to the camping grounds near the dead elephant. If Doctor Thurston was on the job he would naturally be searching for the two ant-humans in the vicinity of the main Driver army.

Without serious difficulty he found his way back to the clearing.

He had expected to rewitness the distressing scene of panic and carnage he had left a few minutes before. Much to his surprise nearly all traces of the tragedies which had just been enacted there had already been removed.

The birds had departed. Before leaving they must have made a good job of cleaning up the premises, for not a single dead ant was discernible.

During his search of the wedding-field, Cabot noticed something moving near the edge of a stone which was embedded in the earth. Flying closer he distinguished one solitary female Driver ant. She was busily engaged in digging a burrow under the rock. His ant-instinct seemed to inform him that she, of all that vast throng, had survived after mating. Many perils were still in store for her before she could start raising a new family. But if her luck continued it wouldn't be long until the progeny issuing from her fecundated body would more than make up for the countless numbers of her sisters that had been sacrificed.

Although the spot chosen for the ill-fated nuptials was almost as deserted as a tomb, there was plenty of activity around the body of the elephant, which was enveloped in a sable mantle of bustling emmets. Obviously unconcerned regarding the cataclysm which had destroyed so many of their brothers and sisters, the workers of the Driver nation had resumed their stupendous task of dissecting the huge carcass.

FOR many minutes Cabot cruised about, flying close to the ground with his antennae and chordotonal organs tensely alert. Not one whiff of the distinctive odor, not a single suggestion of the organ-like tones, which Thurston had agreed to use as signals, could he distinguish.

Finally he was forced to accept the ominous conviction that he could not depend on receiving any help from his human acquaintance. His only recourse was to attempt the almost impossible task of rescuing Diana unaided.

With this idea in view he exerted his flying muscles, striving to gain altitude so that he could map out the best route to follow.

For some time the insect which harbored Diana's soul continued to submit to the abduction which had been forced upon it. But, as Cabot flew higher and higher, his captive began struggling frantically to free herself. So strenuously did she kick and squirm that he was afraid she would extricate herself and become injured in the fall.

Rather than risk this, he decided to

set her down safely upon *terra firma.*

As soon as she was released from his grasp, Diana turned to him and began exploring his head and thorax with her antennae.

Suddenly she began to tap out this excited message:

"So! It is you, is it? How did you dare to do such a thing? I thought you were my new husband—a real ant from another tribe! I hate you! I can never forgive you for doing this to me!"

Quivering with rage, she tore herself away from him and ran madly through the jungle.

Gordon tried to overtake her on foot but couldn't keep up with her. Only by taking to his wings did he finally succeed in intercepting her.

Seizing her head gently but firmly with his mandibles, he said in the antenna language: "Listen to me! I'm trying to save you! Don't you understand? You are in deadly peril! You must let me help you!"

"You help me?"

From the contemptuous touch of her feelers, Gordon could plainly sense her cruel sarcasm as she added: "A fine help you have been! You with your rotten meddling! You have ruined my life! I hate you, I tell you! I hate you!"

"Please don't say that, dear!" he pleaded. "It is that awful ant-nature of yours that makes you talk like that. Can't you understand that I am trying to rescue you from the insect that has taken possession of your soul?"

"I don't want to be rescued," she protested. "I want to remain as I am—a queen ant, destined to become the mother of a great nation!"

REALIZING the futility of appealing to the human side of her nature, Gordon said, "Even if you do want to remain in your insect form, you had better let me help you. Don't you realize that if you try to wander around alone you will be in terrible danger? Here in the jungle, away from the protection of your army, you are surrounded by thousands of enemies. Snakes, lizards, toads, spiders, birds—there are countless numbers of creatures who are hunting for bugs like us. They'll devour us as soon as they catch us."

"Coward!" Diana taunted him. "Well, I am not afraid. And if you are, all you need to do is fly away."

Still holding her in the strong grip of his mandibles, Gordon said, "But I can't let you do that, dear. Don't you realize that I must stay with you and protect you?"

"Why?" she asked. "Why should you bother about me?"

"Because I love you."

Her answer was like a death sentence: "If you love me you will let me go."

CHAPTER XV

In the Pit of the Ant Lion

ALTHOUGH Gordon knew that Diana—the *real* Diana, who always was lovable and considerate and kind to everybody—was not accountable for the malevolent utterances of her ant-personality, he couldn't help feeling hurt by her unkind words.

With a final gesture of anguish he released his hold on her head and watched her dazedly as she rushed away from him and disappeared in the brush. After all his heroic battles against frightful odds—after enduring unspeakable anxiety and anguish—after risking his life repeatedly in efforts to save his beloved—he was now forced to admit defeat.

For several tortured seconds, he stood there alone, numb with despair, hardly knowing what to do. There was no use struggling any further. He might as well resign himself to the inevitable—which could only mean sudden death.

But, though reason told him to quit, something far stronger than reason forced him to carry on. It was instinct—that all-powerful instinct which neither insects nor animals nor human beings can resist—the instinct of self-preservation.

After all, life was sweet. If he could not rescue the creature who meant all the world to him, he could at least save himself. His newly acquired gift of flight aiding him, he still had a fighting chance. With reasonable luck he might succeed in locating Doctor Thurston's laboratory. If he was especially fortunate, there was a bare possibility that he might find the scientist there waiting for him. Perhaps—Well, anyway it was worth trying.

Forgetting all else save his atavistic urge to keep on living, Cabot hopped into the air and flew swiftly toward a patch of grey sky which marked an opening in the dense vegetation. He had ascended above the tallest of the trees, when he was obsessed by the desire to see Diana just once again before leaving her forever. Consequently he dove earthward and circled around the spot where he had seen her a few moments before.

Guided by his marvelously efficient senses of smell and sight, he soon located her. He was surprised to observe that she was no longer running away but was standing near the brink of a peculiar depression in the sandy soil.

It was no wonder that she had stopped to investigate, for the hole in the ground was peculiar enough to arrest the interest of almost any living creature—especially a creature belonging to the notoriously inquisitive race of ants.

Cabot could easily understand Diana's behavior, for he had difficulty in controlling his own curiosity. Singularly, the pit was almost precisely conical in shape. Still more remarkable, a fountain of tiny pebbles was gushing up mysteriously from the inverted apex of the cone.

Only by looking very carefully was he able to discover the cause of this amazing phenomenon. At the bottom of the hole lay a preposterous creature, its body almost completely buried in the loose sand. Only its head was protruding and that was so similar in coloring to the surrounding gravel that it was almost invisible.

What a ghastly head it was!

Armed with long, murderous pincers, it was like a terrifying hallucination of a disordered mind. As Gordon watched in fascinated horror, he saw the shovel-shaped head jerk upward, tossing a spray of sand toward the edge of the pit.

THE sight of this loathsome monster brought to Gordon's mind something he had read, about a strange insect known as an ant lion, which is said to be the most dangerous enemy of the Ant People.

Apparently Diana did not realize her peril, for she walked right to the brink of the ant lion's pit. The loose sand shifted beneath her feet and she began to slide down the precipitous slope.

Frantically she tried to clamber back to firm ground, but her thin legs could gain no hold on the treacherous gravel. From the bottom of the pit a geyser of sand shot up in the air, crashing down upon Diana and sending her tumbling right into the open jaws of the insect assassin.

From what he knew about ant lions, Gordon sensed that Diana's chances of escaping were practically nil. Once an ant lion has grasped an ant in its inexorable jaws it never lets go until it has sucked all the life juices out of its victim, after which it invariably throws the dry, shrunken carcass out of its trap.

Instantly and recklessly, Gordon acted.

There was no time to plan any stratagem or unusual method of attack. The system he used was simple and primordial.

Swooping down into the pit, he hurled himself at the ant lion. By sheer luck he happened to seize the monster at the point where its flat, ugly head was joined to its body. With strength inspired by desperation, he crunched his sharp mandibles together and hung on grimly.

Gordon's first audacious rush accomplished exactly what he hoped it would. The ant lion let go of Diana and tried to fasten its scythe-shaped mandibles in its new opponent. It required all the strength and agility that Cabot could muster to prevent the monster from getting its deadly grip on him.

With savage fury, the creature squirmed and writhed until Gordon was nearly buried in the sand which tumbled upon him from the walls of the pit. His wings and abdomen were battered frightfully, but he clung on doggedly despite the excruciating punishment which the uneven struggle inflicted on him.

Once, as the ant lion gave a particularly vicious heave with its shovel-shaped head, Gordon thought he saw Diana's body go hurtling up in the air and land outside the pit, but of this he could not be certain.

Fortunately, the portion of the ant lion's body into which Cabot had sunk his mandibles was a vital spot. After several tense minutes of desperate fighting, its movements became weaker and weaker. Finally it quit struggling completely and lay limp and motionless.

Having satisfied himself that the ant lion was dead, Cabot searched for Diana. Finding no trace of her inside the pit, he concluded that her body must have been hurled outside the cavity by the fury of the ant lion's struggles. When he attempted to fly out of the hole, he was alarmed to discover that in the cramped space at the bottom of the depression he could not get purchase enough with his wings to lift his body into the air.

He tried to crawl out of the hole, but each time he managed to clamber up a few steps, the sand gave way beneath his tread and sent him sliding back to the bottom again.

CHAPTER XVI

The Sting of Death

KEEPING in mind the example of the famous spider, Cabot tried persistently, not merely nine times, but at least ninety times, to scale the baffling walls of his prison.

His patient efforts, seemingly futile, turned out to be his salvation. The repeated caving in of the sandy walls filled in the bottom of the conical cavity, leveling it sufficiently so that he was able to take off and fly out of the trap.

At first he could not see Diana, nor could he distinguish her familiar scent. Then a grotesque shadow flitted across the ground and a giant wasp came swooping downward. With its broad wings and long, ridiculously slender waist, it reminded Cabot of a homemade glider with an outrigger stabilizer.

Almost before he realized what was happening, Gorden saw the wasp alight on the body of an insect which lay prone on the ground. Gordon recognized the wasp's quarry. It was Diana. He was too far away to hurl himself between her and her would-be assassin. Horrified and helpless, he saw the wasp insert its needle-pointed, gouge-shaped sting into a vulnerable spot between two scales of her chitin armour. With the skill of a surgeon administering a hypodermic, it injected into the wound the poison that meant insensibility to any insect.

Then, holding Diana's body under its belly, with its six legs straddling over it, the wasp huntress dragged her prey to a hole in the ground which she evidently had prepared previously.

All this happened so swiftly that Gordon was almost stunned by the horrible suddenness of it. Before he had time to fly to the scene of the tragedy, the wasp and its victim had disappeared within the hole.

Gordon's first impulse was to follow her into her lair, but a moment of thought made him abandon that idea as foolishly rash. She was sure to come out again and it was far wiser to wait for her departure than to risk an encounter with such a dangerous foe in her own den.

When the wasp emerged a few seconds later, it carefully covered up the hole it had dug, tamping the soil in place with a pebble held between its pincers. Gordon watched the spot closely, otherwise he would never have been able to locate it again after the wasp had finished her work.

As soon as the murderer had departed, Gordon flew to the covered hole and began to dig away the earth with his mandibles. Quickly he opened the cavity and crawled within.

There he found the body of his loved one.

At first he thought she was dead, but a tremulous quivering of her protruding tongue gave him hope that she still lived. Tenderly he carried her out of the burrow to the open air. There, following the promptings of his ant instincts rather than his human intelligence, he licked her body thoroughly, giving special attention to the wound made by the jaws of the ant lion. He seemed to understand that the saliva secreted by his insect glands was highly antiseptic and that no other remedy could compare with it.

Though Gordon knew there was little hope that Diana would live more than a few seconds longer, he determined that he would at least attempt to save what was left of her ant-body.

Enfolding her tenderly in the embrace of his six legs, he flapped his tattered wings and, by a super-emmet effort managed to lift her from the ground. Only when he was in the air, fighting desperately to keep himself and his burden from crashing, did he realize how badly he had been injured in his battle with the ant lion.

RACKED with pain, tormented with grief, his mind wandered back to a certain day when, in the midst of a big championship polo match, he had been thrown from his pony and had subsequently played two chukkers with a broken rib jabbing into his chest and with blood from his punctured lung oozing between his clenched teeth.

That experience, harrowing as it seemed to be at the time, was insignificant in comparison with the agony he was now suffering.

Gamely he flew upward and onward, clutching his precious burden with the strength of despair. He was fortunate enough to locate the path of destruction which the doomed elephant had gouged out when it stampeded through the brush with the myriads of tiny Drivers clinging to its tortured body.

Back-tracking along this clearly marked trail, Gordon had no difficulty in locating the low hanging tree branch on which the ant army had pitched its first encampment.

From this point, his marvelous sense

of direction, inherent in his insent body, guided him to the road over which the soldiers had built their living tunnel and thence through the jungle to the edge of the ravine, where they had battled with the torrential flood.

Flying low, so that he could distinguish all the landmarks clearly, he searched for the place where the army had entered the canyon. For a while he lost the trail; but when he came unexpectedly upon the deserted home of the Farmer-ants he knew he was on the right track again.

Soon he became conscious of an increase in the humidity which reminded him of the river. A few minutes later he was fluttering over the muddy waters of the Kuanza.

By this time his wing muscles were aching so much from the strenuous exertion of keeping his heavy burden aloft that each stroke was a torment.

Finally, a welcome sight met his wearied gaze.

It was the huddle of ramshackle buildings in which he recognized Mrokamda.

Almost paralyzed with fatigue, he used the last remnants of energy in his ant body to fly to Doctor Thurston's laboratory and to force his way through a crevice in the thatched roof. Fluttering to the floor, with his precious burden still clutched in his fagged limbs, he trembled convulsively and lost consciousness.

CHAPTER XVII

Human Once More

WHEN Gordon came to, his first sensation was of a low, monotonous drone in his ears. Then he heard a click and, before he had time to realize where he was, he was dragged out of the cabinet. His feet touched the floor but his legs were so tottery that they crumpled beneath his weight. Someone picked him up and carried him to a chair.

Blinking and confused, Gordon looked into the face of a man who was totally strange to him.

"I am Doctor Dean," the stranger said in a voice that sounded far away.

"Dean?" Gordon stammered. "Dean —Dean—Doctor Dean."

He looked down at his body and was astonished to observe that it was human in form. He had to feel his legs and his head before he could convince himself that he really was a man once more.

Suddenly he sat up straight, grasping Dean's wrist with a grip that made him wince, as he demanded, "What happened to Diana? Is she—is she—" the word "dead" trembled on his lips but refused to come out.

"No," Dean hastened to assure him. "She isn't dead. We found her just in time. Doctor Thurston is looking after her. See! He is just removing her from the transimigrating cabinet!"

A moment later Gordon and Diana were clasped in each other's arms.

"My darling!" he murmured in a husky voice. "My precious, precious darling."

Diana said nothing.

She began to weep hysterically; but there was a smile on her lips which seemed to belie her tears.

Gordon didn't blame her for crying. He felt a bit weepy himself. Two large tears—the first he had shed since he was a small child—welled up in the corners of his eyes and rolled down into the four-day growth of beard on his hollow cheeks.

After a while they became conscious of the presence of Doctor Thurston and his assistant.

The scientist was almost as deeply affected as they were. He kept repeating over and over again, "Thank

God! Thank God! What a miracle! What a miracle!"

When he could compose himself enough to talk coherently he said, "What a relief it was when I found you two waiting for me here! I had given up in despair! I had branded myself as a murderer! I was ready to expiate my crime by taking my own life, when I came back for one last look at my beloved laboratory and here you were. At first I feared you were both dead. Luckily there was still a spark of life in each of your bodies—just enough to keep your souls from escaping. What happened anyway?"

Gordon gave him a brief account of their experiences, omitting all mention of Diana's unwillingness to renounce her ant existence. When he related the incident of the huntress wasp, Doctor Thurston interrupted him with, "That accounts for it."

"Accounts for what?"

"It accounts for the condition of Diana's ant-body. When I first found her, I couldn't understand how she could have survived that terrible wound in her gaster, which, from what you have just told me, must have been inflicted by the antlion. That wasp really saved her life."

"SAVED her life?" was Gordon's incredulous exclamation. "How could that be. Isn't the sting of a wasp absolutely deadly to another insect?"

"Not necessarily. From your description, the one which stung Diana must have been similar to a spex wasp. To provide nourishment for her young, the female wasp uses an ingeniously diabolical plan. After capturing a caterpillar, ant, or other creature, she stings it, using a secretion which does not cause death, but acts like a drug, paralyzing the victim and keeping it alive indefinitely, in a state of suspended animation. Then she lays an egg upon the body of her prey, and hides the sleeping insect, with the wasp egg attached to it, within a burrow dug in the earth."

"Why does she do that?"

"Don't you understand? When her grub hatches from the egg, it finds an abundance of nutritious meat close at hand—meat that is sure to be fresh and wholesome—because it is alive!"

"Do you mean to say that if Diana had been left in that burrow she would have been eaten alive by the wasp's baby?"

"Precisely."

Gordon shuddered.

Diana hid her face in her hands.

"Nevertheless," Doctor Thurston continued, "We have the wasp to thank for saving Diana's life."

"How do you make that yout?" Gordon asked.

"Because the drug of her sting prevented Diana from exerting herself. If she hadn't been paralyzed she would most certainly have succumbed from the effects of the ant-lion's bite."

"Thank heaven for that," Cabot said ardently. Then, with a tender glance in Diana's direction, he added, "And now, would you two good old scouts mind leaving Diana and me alone?"

"Why, of course," both Thurston and Dean stammered in unison.

When they had gone, Diana went to Gordon, placed her hands on his shoulders and said simply: "Lover of mine, how can you forgive me?"

"Forgive you?" he laughed. "What are you talking about? There isn't anything to forgive, you silly darling, you."

"Oh, yes, there is, lover of mine. I remember everything—absolutely everything. What a beast I was! How despicably I treated you! And how noble

—how patient—how wonderful you were to me through it all!"

"Please forget all about it," he begged her.

"How can I forget it? I shall never forget! I must talk about it! I must try to explain why——"

"Please, Diana dear! Please don't say such things. Never mind explaining. I understand."

"How could you possibly understand? How could you know what it means to have a demon take possession of you and force you to do what you know is wrong? It was horrible, Gordon! The most frightful thing about it was that I knew exactly what I was doing all the time. I didn't want to do and say those terrible things, understand. But that awful ant body of mine seemed to obtain complete mastery over my human soul. It forced me to do what I did. I was powerless to prevent it.

Again she wept.

Gordon put her arms around her, kissing her tear-stained cheeks.

"THERE, there, sweetheart. Let's not say anything more about it. I understand perfectly why you acted as you did; and I love you—I love you now more than ever before and that's a whole lot, you know."

He drew her to a chair and sat down with her in his lap, rocking her back and forth like a baby. After a long period of blissful silence he said, "Diana, dear."

"Yes, my lover."

"How about lolling languidly on that California patio of mine?"

Her answer was prompt and emphatic: "That sure listens swell to me, sweetheart."

Thus encouraged, he went on, "And how about a quiet little wedding as soon as we get home?"

"Of course I'm going to marry you," she murmured as she put her arms around his neck and drew his face closer to hers, "But not quite yet, darling."

"Why not?"

"Well, you see it is like this: Before I get married—before I settle down to be the sedate and proper wife of a successful businessman like you—I would like to do something really unusual—something dangerous—something exciting."

Gordon looked at her in amazement before he said, "Let me get this straight, Diana. As I understand it, you've been somewhat bored by the commonplace life you've been living during the past few days; and before you marry me you would like to do something a bit out of the ordinary. Is that the idea?"

"Yes, lover of mine! That's the idea precisely!"

Striving to reconcile her astonishing words with the inscrutable expression in her delphinium-blue eyes, Gordon could not be certain whether she really meant what she said or was merely trying to tease him.

THE END

Terror Out of Space

By H. HAVERSTOCK HILL

PART II

Our story goes on with the adventures of our four rather wonderfully drawn characters with the strange visitors from a distant world. We are sure that our readers have been interested in the charming (?) Arabella and her rather victimized husband and we are giving our readers further details of what happened to the party from the Solomon Islands.

Illustrated by MOREY

What Went Before:

CAPTAIN SPAIN and Billy Harper, South Sea traders and plantation owners, are sitting on the verandah of their bungalow one hot afternoon when they see a strange flash in the sky. Mrs. Harper, Mrs. Spain and the two men speculate as to its cause. They conclude it must have been some species of meteorite.

Later, on the evening of that same day, a strange red ray emerges from the jungle, cutting a path through the trees, destroying the flagstaff and narrowly missing the bungalow itself. The two men, with their manager, Retallick, arrange to take watch, turn and turn about, as they begin to suspect the strange ray may be connected with the supposed meteorite they saw earlier. Spain and Harper leave Retallick to take first watch.

They awake in broad daylight to find Retallick has disappeared. A search inclines them to the belief that Retallick has gone into that part of the jungle from whence the ray came. They surmise from the indications that he did not go of his own free will. Arming themselves and some of their native retainers, they follow the trail through the jungle. They come suddenly on a space ship in a clearing, and are overpowered by strange beings.

They are taken on board the space-ship, where they find Retallick. The space-ship immediately sets out for, as they presently learn, the planet Mars, from which world their captors hail. The Martians on acquaintance turn out to be kindly folk, and gradually the little party grow accustomed to their lot. They learn the Martian language and are shown many strange scientific wonders.

Our American friends are talking with Bo-Kar about the strange signals heard on their radio the night before their unexpected "kidnapping" when a resounding note of a gong is heard from somewhere in the depths of the ship, charged with warning and menace. The gong means that another space-ship has materialized and shown hostile intentions.

CHAPTER XII

Combat

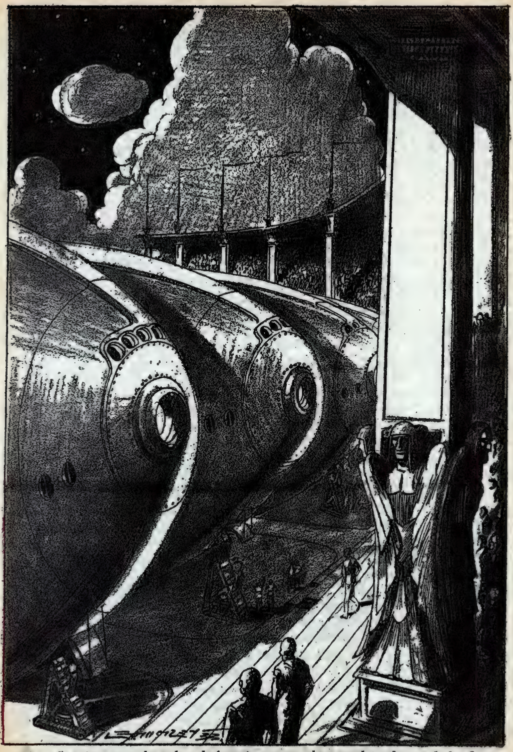
WE met the others coming down the passage. The clanging of the huge gong had thoroughly alarmed Marian and Arabella, and Spain himself was in little better state. Only Retallick seemed to have retained any sort of presence of mind, and his main idea was to get hold of Norna and find out what it was all about.

I told them as briefly as I could the little we knew, and I had scarcely finished when Norna herself came hurrying breathlessly towards us. She flung a glance at Thrang and myself, and I suppose our faces told her a good deal.

"You know . . . ?" she said. "We are attacked."

"As bad as that?" I said. "I didn't think it had got as far as that. All your father could tell us was that a space vessel of hostile aspect was approaching."

She nodded quickly—an earth gesture she had picked up from Retallick. "The gong would have told him that," she said. "But come." She turned to Thrang. "You are taking them to the control room?"



The offensive must be taken before it was too late, and to that end the fleet of space-ships, that they had been secretly building ever since Bo-Kar's experiment had proved successful, would be placed in commission.

"The observation chamber," he corrected.

"I meant that," she said sharply, though I don't fancy she did mean it. "But wherever you have orders to take them, let us go quickly."

She caught Retallick by the arm and almost dragged him forward. An odd girl. For all the faint coppery tinge of her skin and the alien Martian ways that kept cropping up every now and then, I could never regard her as other than a girl of our own race. She was attractive, too, without being beautiful. Had I been in Retallick's shoes I believe I should have gone the way he was heading. But the real test of the girl's worth to my mind lay in the fact that Marian and Arabella, after the first shock of her strangeness had passed, had taken to her more readily than I had expected.

Within a very few minutes after the gong had sounded we found ourselves in the observation room and grouped about one of the basin-like things with which we had made acquaintance during our first few hours on board. The vessel, of course, was closely shuttered, the whole shell being hermetically sealed, and I looked in vain for anything in the nature of a periscope that transmitted the view to the basin. Thrang, however, volunteered the information that the apparatus was a development of television. Sensitive discs, in whose composition selenium played a part, were fixed at stated intervals round the vessel's hull, and wires connecting these to the basin had been welded through the shell. He gave the basin itself a name that I can only translate as "vision-plate," but it will do as well as any other, and as such I shall speak of it in the future.

At first we could see only the blackness of the void, punctuated here and there by the unwinking brilliancy of the stars. Once as we swung around we caught for a moment a glimpse of the sun—a huge, glowing thing with streamers of flame thousands of miles long flung out from it like living, clutching tentacles. We saw it but for the moment and next instant it was gone as our angle shifted, but even that one flashing view temporarily blinded us.

When we looked again, its place in the void was occupied by a gleaming, silver sphere which seemed to be approaching us at an incredible speed. As we watched it, some change I could not make out seemed to take place. Nothing appeared to have altered, yet in some unaccountable fashion I was certain a new factor had entered on the scene.

Thrang touched me on the shoulder. I saw that he was wearing something like a motorist's goggles, only the glasses seemed so thick as almost to hide the eyes.

"Put these on," he said, handing a pair to me. As I took them I saw the others were already, under Norna's direction, adjusting similar glasses.

I turned to the vision-plate again and the thing that had puzzled me now became apparent. A red ray, not unlike that of the Martian ship, but deeper-toned and more sullen-looking, so to speak, was stabbing out towards it from the silver sphere.

"A SORT of infra-red ray, outside ordinary visual frequency," Thrang explained sketchily, for it was no time to go into intricate details. "These lenses make it visible and at the same time nullify its harmful effects on the eyes."

I could see, from the way the silver sphere shifted in the vision-plate, that we were trying to dodge the ray, but the hostile vessel somehow held to us tenaciously, as though that beam were a claw digging into our vitals. In spite of all our maneuvering we could not avoid it. Yet, though the ray itself must have been playing on our outside plates, nothing seemed to be happening. I should have imagined that by this time it would have been manifesting itself in some fashion, perhaps by heating up our shell.

But as I looked a thin pencil of green, save for the difference in color, like the mercury mounting in a thermometer tube, began to run up the center of the red beam, and shoot out toward us.

Thrang smothered an exclamation.

"What is it?" I asked.

He hesitated. Then: "They're using the low frequency beam as a carrier wave of some sort," he said softly. "I don't know what that green ray is, but I fear its possibilities."

That, I must say, was not very consoling news. It meant that in Thrang's estimation the Martians possessed no weapon capable of countering it. Apart from that, this infernal business of fighting in the void had a side to it that I did not relish. On land or sea, if one's vessel of attack be disabled, one still has a fighting chance. At sea, even after you're tossed into it, you may be picked up by a boat; on land, at the very worst, you can always turn tail and run. Whether you get away or not eventually of course depends on circumstances and your own individual luck.

But here, with nothing but empty space about us, the first shot that got home would finish us. It needed only one breach in the shell of the ship, and our air would pour out and the cold of space creep in and freeze us solid. A pleasant prospect.

The green beam must have been flashing along in its course, but to us agonized watchers it seemed to creep. Then, when it seemed as if it must surely stab through us like a sword of flame, something happened. For the moment I was not quite sure what it was.

The ship jumped like a kicked football and we were shot all over the deck, and at the same time everything seemed to reel about us. We picked ourselves up, frightened and disheveled, but otherwise unharmed, and crowded again about the vision-plate. The sphere was no longer in the same plane with us. We appeared to be looking down on it, and the red beam with the green ray in its heart was stabbing out into the depths of space. Somehow, by what desperate maneuvers I did not care to think, we had torn ourselves loose just in time from the grip of the red beam and, with the full power of our rocket engines to give us acceleration, had literally been hurled upwards. Beneath us the silver sphere rolled a little from side to side—though there was no atmosphere here to communicate concussion, it looked as though the beams themselves might have carried the vibration back to her—steadied her, and again the red ray went stabbing out in search of us, thrust upwards like a crimson sword of flame.

OUR commander seemingly had some idea of seeking safety in flight, for the silver sphere wobbled in our vision-plate and seemed to decrease in size. But if we had hoped to shake her off by running away we were to be doomed to disappointment, for, far from decreasing in apparent size, the sphere maintained its dimensions. For a moment it looked as though we were going to hold the distance constant, but even that was not to be.

AT a bound, as suddenly as though it had been hurled across the void from the hand of some cosmic giant, the sphere increased in apparent size, seemed to grow larger, ever larger, until it threatened to fill the whole of the vision-plate. The red beam, too, was reinforced presently by another and the two swept out, independently of each other, in search of us, as though they were trawling the nooks and crannies of space for us. In one way we had the advantage of her. We were between her and the sun; she was visible by the light reflected from her sides, while we could not be seen unless we got in direct sight. Even then we would be visible only as a black occultation against the flaming surface of the sun, too small and too difficult a mark from a visual point of view to tackle with a sighting shot.

As against this, however, was the possibility that the sphere's people knew our destination. A matter of simple calculation would give them the point where our line of flight and the orbit of Mars must intersect, if we were to reach the safe conclusion of our voyage, and all she would have to do would be to speed off there and intercept us as we came up. That, I believe, was the one danger Bo-Kar had feared from the very moment he discovered the stranger's powers of speed.

Apart from that, however, the sphere had another shot in her locker. She had no intention, if it could be helped, of allowing us to get away, and aided by her superior mobility she presently took a course that it was evident would flush us sooner or later. Like a great ball of silver she went dancing up and down the firmament, weaving against the stars a zig-zag course that gave her a chance of sighting us at any one of a dozen angles, free of the sun's background.

The instant she secured a good sight of us the beam shot out and gripped us; then that fearful green streak began to unroll. Our ship lurched over, nose to the zenith, and one of our own beams went slanting down towards the stranger. No doubt we had used them earlier in the conflict, but it must have been at such an angle that they had not come within sweep of the vision-plate. But now we had a full view of the battle of these Titanic forces.

The two rays were not quite the same shade—ours were brighter, if anything—and we were able readily to pick out one from the other when they clashed. I thought at first that the stranger's superior power was going to nullify ours, and I watched with a growing feeling of apprehension the green streak slowly climbing, like a tired man ascending a steep hill. Yet after a time it looked as though it had reached the limit of its effort; then I fancied it had slipped back a trifle. At the very worst we were holding it; we had got into neutral. Victory would evidently be to whichever side could increase its power the quicker.

A bell clanged in our room; the note was taken up and repeated from post to post around the ship, and died away in the distance in vibrating, menacing echoes.

I looked inquiringly at Thrang, and the Martian drew a little closer to me.

"THEY are taking up all the power the generators can develop," he said quietly. "That is a warning to all departments to stand-by. All our other power apparatus will be depleted, and it would lead to accidents if there was no warning."

For one long-drawn age—in reality it was not more than a couple of seconds—nothing seemed to happen; then, as we watched the figures in the vision-plate, our own ray suddenly grew brighter, turned to a glowing crimson that even with protecting lenses before our eyes almost blinded us. The sphere's beam wavered as a stick bends under pressure, slewed off to one side and disappeared entirely. The sphere itself changed from bright silver to brighter gold, heated to a bronze red color, then spun dizzily. Our ray, which seemed to be a force as well as a beam of radiation, appeared to be pushing it around, as a man will roll a barrel.

Then abruptly our ray shortened; the spinning ceased and something like molten rain fell from the sphere. I gasped. A huge crack showed in its surface, and the vessel itself hung motionless, floating free in space.

Even then I did not quite understand what had happened, save that I guessed that, in some fashion yet to be explained, our ray had stripped a portion of the outer shell of the sphere away and cracked the interior lining. But whether the sphere itself had been damaged beyond all hope of repair was more than I could say. I did not even know if it had been put temporarily out of action.

I asked Thrang if he could tell me, but he shook his head. "One cannot say," he said. "It is the first time we have ever used this ray in a space battle. Even we do not know what it is capable of doing."

"At least," said Norna, from across the vision-plate, "it has disabled them. A portion of the shell seems to have been fused away, and there is a crack in the inner surface. Whether it extends deep enough to let in the cold of space remains to be seen."

"It doesn't look to me," I remarked, "as if your father means that to remain long in doubt. Anyway, we're heading straight for the sphere, and it's growing in size every second. Possibly he means to cruise round her and see what there is to be seen."

Norna looked up at me with a flashing glance of her dark eyes. "He'll do more than that," she said with a note of admiration in her voice. "If it is at all possible he will put off and board her."

"But how?" I exclaimed, visions of what boarding meant on the seas of our world dancing before my eyes. "It can't be done, not with safety. The intense cold of outer space . . ." He stopped abruptly.

Norna shrugged her shoulders. "It can be done," she declared. "You had better wait and see, though. It will make it clearer than any explanation of mine."

We earth people looked at each other—all save Retallick, that is—he had eyes for no one else but Norna—and I saw doubt, disbelief even, mirrored in Spain's eyes. Arabella, on the other hand, had swung round from a complete incredulity to a state of mind where she was no longer capable of being amazed at anything. She seemed a trifle dazed, I thought, as her eyes met mine, and I could have sworn to more than a touch of fear in them. Indomitable and all as she could be in the New Guinea and Solomon Island bush, when facing hostile tribes or the perils of the jungle, she was now in an environment concerning which she felt completely at a loss, with the play of weapons about which she knew nothing, and surrounded by strange and incomprehensible forces whose very existence, to the average untrained and unscientific mind, must have savored of black magic. To a greater or less extent, according to our several temperaments, much the same was true of all of us.

A TINKLING bell rang in our room, and from some hidden mouthpiece a voice spoke some words in Martian that I did not quite catch. Norna crossed the room to the wall behind her, stopped in front of the wire-meshed disc on the wall that I had taken to be some sort of ventilator. She touched a button set beneath it, then spoke in a voice too low for us to hear. The answering voice, too, had been toned down so that it no longer sounded in our ears.

She turned away from it after a few sentences had been exchanged, and faced all of us.

"That was my father," she said, and I noticed she spoke to us, not to Thrang, who was standing a little apart. "A party is setting out for the sphere. There may be things of interest to see in it. Two earth people can come if they wish. I myself am leading the party."

Retallick stepped to her side. "I'll make one," he said.

She motioned him away. "I had already decided on you," she said with a distinctly proprietorial air. "Two others than you, I meant."

She looked around at the rest of us. "Quick, make up your minds," she went on. "I will have no delay."

Arabella caught at Spain's arm. "You are not to go," she said in a low voice.

Norna flung her a glance of contempt. "There is no danger," she said as I made a half-hesitant step forward. Truth to tell, I was curious to see what the sphere held, but the thought of Marian tugged at me. But I think Marian must have guessed what was passing in my mind, for she gave my hand a little squeeze, and: "If you'd care to go, Billy," she said softly, "I think I'd rather like the experience."

"Good." Norna spoke with a curious abruptness. "Come with me, then."

Leaving Thrang to look after our companions who were staying behind, she led the way out of the room and down the corridor to a door. This she opened and beckoned us inside. Around the walls were hung what I at first took to be some species of divers' suits, save that they were made of metal. Without waste of time she handed one out to each of us, explaining as she went along how each section was donned.

As she handed me mine she remarked, "I am glad you are coming. You have more of the scientific spirit than your friends."

Two attendants who had come in a moment after us, helped me and Marian on with our suits, while Norna attended to Retallick. The suits were made in four pieces—head, trunk, and each leg separate. Though they were constructed entirely of some sort of metal throughout, they were wonderfully light for their size, and tbe interior was lined with a material meant to resist extremes of temperature. They could also be electrically heated up to a required degree.

We were screwed into them with a celerity that surprised me, every joint was smeared with some quick-drying, varnish-like stuff whose particular function I discovered later was to seal the suits hermetically. A battery, supplying the current for the heating wires, was adjusted on our backs, an apparatus containing enough air for six hours was attached beside it, the various wires and tubes were tested, and at length we were passed as ready for the expedition.

I felt curiously helpless and ungainly, but to my surprise, when I attempted to move, I found I could do so without difficulty.

"Take one of these"—I started as I heard Nona's voice in my ear—"we may need something of the kind, though I hope not." She handed us each one of the small ray tubes that seemed to be the common lethal weapon with the Martians. We had already become acquainted with their mechanism, so she had not to waste time in explanation.

"If you wish to speak," Norna's voice went on, "I can hear you and you can hear me. Set in the helmet just below your mouth is a diaphragm to pick up your words, and receivers are fitted close to your ears."

Some kind of short range wireless, I fancied—a convenient arrangement without which we might have been at a loss what to do. As it turned out, it came in rather handy.

"ALL ready?" she asked, and on receiving our answers in the affirmative she directed us to turn on the knobs that sent the heating current through the suits. Almost immediately I began to feel overpoweringly warm, though I knew enough to realize that the sensation would disappear the moment we made contact with the cold of space.

One of the attendants after glancing at some dials on the wall, opened a small door near them—not the one by which we had entered the room—and one by one we passed through. The door closed with a clang behind us. For the moment we were in darkness. Then a light glowed overhead and I heard the hiss of escaping air. We were in the air-lock apparently, and the air was being pumped out into one of the rooms behind us. As the atmosphere thinned the suit became less uncomfortably warm, and presently even a slight chill was noticeable.

Norna's voice came again, not so strongly this time. "You will each find a small pistol at your belts. They are reaction pistols, similar in principle to the ship's rocket engines. They are necessary to propel us through the void. Each pistol has sufficient charges to take us to the sphere and back. No one, no matter what happens, is to discharge his pistol before I give the word. That will not be until we have left the ship."

I looked about me. There were others in the room besides us, the rest of the party of the Martians Norna had spoken about as going to accompany us. I had not heard them enter, but they must have followed in close on our heels.

I stared straight ahead at what I guessed was the wall of the ship and wondered how long it would be before the port was opened. Marian's voice—a small whisper—came tingling in my ear.

"Somehow, Billy," she confessed naïvely, "I'm not feeling in the least afraid. I'm looking forward to the experience."

I would have answered, but at that precise instant the light bulb above us went out and another some distance from it glowed out redly.

"Ready," came Norna's warning command. "The air-lock door is about to open."

Gently, without a sound of any sort, it must have slid back, for the blank wall of the shell suddenly lightened in color. Another second and the inner wall slid away in its turn and the cold of space reached out and enwrapped us.

Norna moved forward through the opening and we followed her. Abruptly the floor beneath my feet ceased to be. Where it had been there was nothing but an immense blackness spotted with stars. A feeling of intense nausea, a sensation of falling headlong through space seized me, and involuntarily I caught at Marian, with some idea of saving myself.

CHAPTER XIII

What the Sphere Held

HAD I given a moment's thought to the matter before I stepped off the ship I would have realized that I could not possibly fall. There is no such thing as tangible gravity in free space—we felt a little, of course, where we were—and where there is no gravity a body will float weightless. Yet it is not quite correct to say that we were entirely free of the forces of gravitational attraction. Even the ship itself must have exerted some pull over us, though a very weak one indeed.

I found that out the instant I clutched at Marian. My abrupt movement must have upset forces that until then had been in a state of equilibrium, for we floated rather than were flung against the ship itself. The delay this occasioned brought us to the heel of the party, the leading members of which had already floated some distance away from us.

"You may use your pistols now." For the moment I had forgotten mine, but Norna's voice vibrating in the receivers at my ears recalled it to me. The working of it was simple, one pressure of the trigger to each discharge. It was the direction that mattered most. One had to hold the pistol pointed in the direction from which one was coming, for it must be remembered that motion was achieved, not by the direct discharge itself, but, so to speak, by the back kick of the released gases.

We had strict orders not to use the pistols more than was necessary, so, still holding on to Marian with my free hand, I did not discharge mine again until we seemed likely to drift almost to a standshill. Our two pistols went off together as before, and as we drifted backwards I glanced over my shoulder—you must remember we were facing the ship, with our back to the sphere to which we were going—and found that we were quite close to it. Two of the Martians, whom I took to be Norna and Retallick, were already clinging with the metal fingers of their suits to the edge of the crack in its surface. Seemingly they had no intention of boarding the vessel until all the party arrived.

We gained the sphere. Yards of the metallic surface had been melted away by the heat of our ray; the inner lining, which was of a thick, glass-like substance that I took to be fused quartz or something very much like it, had cracked across until from top to bottom of that quarter of the sphere facing us there was a rift four to five feet wide. Ice had gathered round the edges of the rift. I discovered that when I seized in my metal covered fingers what I thought was a projection of the quartz and it snapped off, its outer surface trickling damply from the heat of my suit. It was real ice.

It was just as well that something of the sort occurred when it did, for it warned us not to trust too much to appearances, that what looked like quartz might be no more than thin ice, that would break under the strain.

The interior of the sphere was in darkness. Peering over the bent shoulders of those in front of us I could see that much, but little more.

"All ready?" The call from our leader echoed in my ears. I responded. I heard the murmur of other voices. Then Norna grasped the edge of the crack and with scarcely an effort raised herself and stepped inside the sphere. Retallick followed her on the instant, and the rest of the Martians poured in after them. I handed Marian up to one who bent back to help her, and in another second we were all standing inside the strange space-ship.

Everything about us was dim. We could see strange shapes, whether of machinery or beings of some sort I could not make out, showing eerily in their coverings of ice. So quickly had the eternal cold of space entered and enfolded them.

A LIGHT snapped on, a portable lamp of great power carried by one of the Martians. Its rays swept out, lighting up the chamber into which we had entered. Ice, ice everywhere, so that it was difficult to say at a glance what lay beneath. Machinery, I thought. I could not see anything that in any way resembled what had once been a living being.

The Martians turned curious eyes on the machinery, however; apparently it differed in many respects from what they were used to in their own craft, and two of them, the engineers of our party, lingered behind for a closer examination, when the rest of us proceeded.

This chamber opened into another that it was obvious had been some sort of a control room, and here we got our first glimpse of our late assailants. I scarcely know what I had expected to see, something I suppose in one degree or another bearing resemblance to the human form, but I was hardly prepared for the sight that met our eyes. Seated before a bank of keys, not unlike those of a typewriter, was a broad-backed, bent-shouldered figure, coal-black even beneath the coat of thin ice already forming on the body. A squat figure, suggesting in its build tremendous muscular power, dressed entirely in black, I thought. And then I looked again and saw that it was not, that the body was absolutely unclothed.

We moved round so that we could see the face of this thing, creature or man, or whatever it was. Granted that the face was twisted and distorted by the fear of the cold death so suddenly gripping it, it must, even in life, have been singularly repulsive. The features were akin to those of no race I knew, and the Martians seemed as much puzzled as I was. I don't quite know how to describe the face, yet it is not that I don't retain any clear image of it. I do. At times it still haunts me in my dreams. Imagine if you can a face carved out of coal by a debauched and drug-ridden sculptor, a face for all its broadness with a curiously satyr-like cast, leering evil made incarnate.

I was not alone in the shudder I gave. More than one of the Martians made an odd sound of disgust that crackled in my ear-phones.

"Let us go," Norna said abruptly. She spoke in a voice that, even allowing for the distortion of the 'phones, had a hard metallic ring in it.

She and Retallick came close to me as we moved away.

"God, Harper," said Retallick, "have you ever seen anything like it? Of all the diabolical faces I've ever come across. . . . "

"Don't talk about it," said Norna sharply. "It's inhuman, beastly." She gave the lie to her own words the next instant. "Did you notice its great size?" she ran on. "It would have made two, three of any of us."

I had noticed that, had I seen to the suggestion of strength and power in the spread of the huge limbs. Were the old legends, the classical tales of half-human monsters descending from the skies, so many myths after all? Might they not have their basis in an invasion of some such abortions as these?

Somehow I imagine that they must have come from some smaller planet than either Mars or earth; I based my ideas on their size, thinking that on a larger planet they would have been crushed by their own weight, but I have since learnt that such a conclusion might not be altogether fundamentally sound. The gravitational pull exerted by a planet seems not to depend so much on the size as on the mass of the planet. For instance, though Neptune is about seventeen times the size of earth, and object would weigh much the same on either planet.[*]

Scattered about the ship in the other compartments we visited were similar forms to the one which had so excited our horror in the control room. In all, we counted about two hundred of them. Under Norna's orders we kept our eyes open for written or pictorial material of any sort, as she wanted if possible to get some clue to the abode of our late opponents.

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[*] Mr. Harper was correct in this assumption. The formula for determining the force of gravity on any planet, taking that on earth as a unit is the mass divided by the diameter squared. In the case he cites, Neptune with a mass seventeen times that of earth possesses a diameter 4.4 times as great. The formula applied—17 divided by 4.4 squared—gives a gravity pull of approximately .9 of that of earth.

IN one room, which from the variety of instruments scattered about seemed the equivalent of our observation chamber, we found a number of thin yet tough plates of metal, engraved with characters that suggested some specimens of cuneiform writing I have seen. On shelves in the same room were many more of these sheets fastened together into volumes. Some of them contained written or printed matter—it was hard to say which it really was—while others contained what we took to be charts. All of these that we could find we gathered up, to be taken back to the Martian ship with us in the hope that an examination of them by our experts might yield secrets of some value. The motive power of the engines and the secret of the rays used would have to be left for another occasion, Norna declared, from which I concluded that it was her intention to have the sphere towed in if at all possible. For my part I could not see how this was going to be done. The moment the sphere came within the radius of Mars' attraction it would crash to the surface of the planet. My reasoning was sound, with one omission. I had not counted on the ability of the Martian engineers to counteract the gravitational attraction of their planet.

In all we must have spent a good two hours in the sphere, and I think on the whole our labors were not without result. At length Norna seemed to consider it was time we got back, and I was feeling much the same myself. For one thing, though we still had a couple of hours supply of air left, the space suit was beginning to get rather on the stuffy side. Probably this was due to the heating apparatus, but with so many evidences on every side of what havoc the spatial cold could cause, I did not fiddle with the controls. Marian, too, remarked she had a headache, arising no doubt from the same source as my own discomfort.

The books we had found in the observation room were divided amongst us, and we retraced our steps to the outer chamber. Our two engineers were still there, lost to all sense of time. The machinery had apparently enthralled them, and they were loath to leave, but whatever Norna told them seemed to comfort them, for they offered no objection when she said we must all return now.

The Martian ship in the interval had circled closer to us, and we had not so far to go on the return journey. In a very few minutes, or so it seemed, we were again within the entrance to the air-lock; the outer ports closed on us, and the air, forced by the pumps, began to hiss in and fill the chamber. I was never more pleased with anything than I was when the space suit was unscrewed and I could crawl out of it. But this divesting of our metal garments took longer than the donning of them had done. The stuff used to hermetically seal the joints had to be melted first, a ticklish job, for it had to be done with care, so that the suit itself would not be injured. But even that was over at last, and we were able to walk away with a comfort which we had almost forgotten to exist.

I noticed that while we were getting out of our suits, others were climbing into theirs. They seemed mechanics of a sort, judging from the tools they were taking with them, and just as we were going out some others came in with a roll of thin but strong-looking wire cable. Norna remained behind, talking to some members of this party, but Retallick came out with us, and it was from him we learnt what was afoot.

"Bo-Kar has decided," he told us, "to tow the sphere over alongside and see what can be done with it. Of course they're going to tow it to Mars if all else fails, but they have hopes that they may be able to seal it, and perhaps install generators that will enable it to get along under its own power. They seem rather remarkable mechanicians, these Martians."

"IF we can judge anything from what we saw over there," I said grimly, "they seem to have machines that our fellows here didn't know how to use. And there's always the chance that in tinkering about with machinery you're unfamiliar with, you may solve the secret of its working by blowing yourself sky-high."

"There's always that," Retallick admitted thoughtfully.

"Billy"—it was Marian who spoke—"is there any certainty yet that this was the ship that was being called the night before we came away?"

In the excitement of the last few hours I had clean forgotten all about that. But now she brought the matter up, its full significance hit me between the eyes like a blow from a clenched fist. Bo-Kar had assured us that no call from a space-ship had come from them, and in the light of recent events I had little or no reason to doubt his word. His alternative theory, that of radio deflection, had gone by the board the moment the sphere had appeared, and then he had as good as told me that my idea about another space ship must be correct.

"Marian, Retallick," I said huskily, and I felt the sweat stand out on my forehead in beads at the sheer horror of the idea, "if this sphere had anything to do with those messages that night, it's almost certain that another of those infernal things with its ghastly crew is hovering somewhere in the vicinity of earth at this very moment. And the damnable part of it all is that we can't do anything."

For the moment the idea of our own planet being overrun by those black horrors must have staggered the others, then:

"Billy, Billy, are you quite sure of that?" Marian said with a quiver in her voice. "There must be some way we can warn them."

"Of course there is," Retallick cut in. "I'll put it up to Norna, and see if there is anything Bo-Kar can do. You can bet your life that if there is, she'll keep him up to it."

He came closer to us and lowered his voice, glancing about as though he were afraid of being overheard. "I don't know whether it has occurred to you," he said slowly, "but it seems to me our friends here weren't as surprised when the sphere appeared as they might have been."

"They've lost the capacity for surprise," I suggested.

Retallick shook his head. "Not altogether," he declared. "They can keep their emotions well in hand though. But you must have noticed whenever we tried to find out from them whether any of the other planets were inhabited by intelligent beings, how they always managed to evade giving a direct answer. I think they must have known or suspected that their own inter-stellar supremacy wouldn't go long unchallenged, and have made preparations accordingly. And if you want anything to clinch the argument you can find it in the fact that though this is admittedly the first successful space-ship they have constructed, they have developed methods of inter-spatial warfare to such an extent that they come victorious and unscathed out of the first scrap they have. Which is not to mention the further fact that they had made every preparation you could think of to launch a boarding party across the void and deal quite effectively with a crippled enemy. They knew exactly what would happen, and it did!"

CHAPTER XIV

The Landing

ALMOST six weeks from the day we had left earth a summons came to us from Bo-Kar. We went, wondering what new thing had transpired. I had long since got over my original distrust of the Martians—I fancy the matter of the sphere had helped me to view them in a different light—and I had come to the conclusion that their reticences and what I had conceived as evasions were due more to racial characteristics than to any deliberate intention of deceiving us.

Spain and Arabella, on the other hand, had become more and more distrustful of them as the days went by. Nothing Marion, Retallick or I could say would make them budge from this position. Quite frankly I could not understand their attitude. As long as I had known the pair they had been ready mixers, and more than once in the course of our joint careers we had trusted our lives to the good-will of cannibal tribes and got away with it. I pointed this out to them.

Arabella's answer, which seemed after all to hold a modicum of truth in it, was, that in the case of the Martians we were dealing with beings of another world, whose powers compared with ours verged on the supernatural, whereas on earth we had been dealing with human beings whose ways we more or less understood, and who were, if anything, our intellectual inferiors. This latter was not strictly true, of course, but it gave me some sort of understanding of what the Spains had at the backs of their minds. For perhaps the first time in their careers they found themselves in the hands of people to whom they were as children in the matter of mechanical attainments. In a word their mistrust was as much resentment at a situation they could not control, as it was anything else.

Then, too, I imagine that Arabella, even though she was unwilling to admit it, was rather appalled not only at what we had told her about the sphere and its contents, but at the new and terrible weapons of warfare she had seen in operation. I found indeed, when I talked it over with her later, that she had never heard of the Coolidge tube or even of the possibilities foreshadowed by a logical development of the cathode ray. It was news to her that any such experiments had ever taken place on the earth.

To return to the message that brought us into Bo-Kar's presence. Norna conducted us to the door of the room where we had had our first experience of the mind-picture machines, but I noticed that she did not come in with us. Bo-Kar indeed was the only one of those gathered in the room, whom I could say I had seen before. The others—two of them—were strangers to me, and I saw with vague misgivings that they were garbed as surgeons ready for an operation. An odor of antiseptics of some sort intensified the medical atmosphere.

For one frantic instant the idea flitted through my mind that perhaps I had been wrong and the Spains right after all, and that we were to be used as the victims of some horrible vivisection experiments. But I shook the idea from me the next moment. Norna would not have been so complacent about the matter had anything of the sort been in the wind. She must know what was going forward, and she certainly would not have left Retallick to any such fate without making some attempt to save him.

Bo-Kar, with his almost uncanny property of divining what we were thinking, told us in the very first sentence that we had nothing to worry about.

"WE are well within the gravitational field of Roca," he said," and within a few torcas* we should be landing at Ilan, one of our chief cities. But before we land it is well that you should know something of the conditions you will have to face. The atmosphere of Roca, for instance, is thinner than that of your planet, and if you were not warned and the necessary precautions taken you would find a considerable strain put on your hearts and lungs."

"Do you mean," said Retallick, "that we mightn't be able to breathe it?"

"Not quite," Bo-Kar returned. "We are all now breathing air of earth density, as we renewed our supplies there, and what I have to say applies more or less to all of us. All the Rocans on board have already been tested, and they will not suffer when the air is gradually thinned down to the required density. But with you . . . well, we do not wish to place an undue strain on your organs, and it is so that our medical men may pronounce on them that you have been brought here."

"Tell me," I said, merely from the point of view of curiosity, "what would happen if you found that anyone of us could not stand the reduced air pressure?"

"In that case," said Bo-Kar solemnly, "we would have to provide the unfortunate person with a special atmosphere of her own." His eyes strayed towards Arabella as he spoke, and I wondered if he thought she would not pass the test.

"But how . . .?" I was beginning to ask, when he cut me short with a gesture.

"We can discuss that when the need arises," he answered. "In the meantime may I suggest the doctors are waiting?"

The rebuff was not altogether undeserved, so I made no further attempt to extract information from him. I hadn't a chance, anyway, had I wished even The two doctors came forward, and it was then I saw for the first time that one of them was a woman. Rather considerate of Bo-Kar, that.

I quite expected that the examination would be conducted in the room we were in, but the woman signed to Marian and Arabella, and took them through a door leading into another and smaller room. Our man, on the other hand, dug out something that I thought at first was a sort of improved stethoscope, and approached Retallick.

Retallick looked up and smiled, and went to bare his chest, but the doctor gravely shook his head, and instead fixed one end of the thing on our friend's forehead. The end pieces that in the earth stethoscope would be fitted to the ears of the doctor apparently played a different part here. The doctor put them to his eyes. . . .

Next he examined Retallick's chest, and after that took up a small black box from a stand nearby, fixed a sort of clip over the patient's nose and asked him to breathe deeply. He made sundry adjustments while Retallick was complying with instructions, turned various little dials on the box, though all the while he never took the end-pieces away from his eyes. At length he removed the nose clip and signed that he was finished with Retallick.

MY own turn came next. I think the doctor marked my air of curiosity, for when it came to sounding my chest, before he fixed the clip of the box to my nose, he removed the eyepieces, smiled, and clapped them over my own eyes. What I saw staggered me. I was looking inside my own body! I am not biologist enough to understand all that I saw, or even know what it meant, but I had the queer feeling of watching my heart and lungs at work. It was so vivid indeed that for the moment a feeling of nausea seized me.

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* Torca: a time measurement that for all practical purposes can be taken to correspond roughly to an hour of our time.

The doctor again adjusted the lenses, for so I suppose they were, on his own eyes, affixed the clip of the black box to my nose, and advised me to inhale slowly and deeply. I did so.

Immediately it seemed that my head swam, and I had a sensation of gasping for air. But that speedily passed, and in its place came an odd feeling of exhilaration. I grasped now what was happening. I was being tested for my reactions to graduated doses of the Martian atmosphere. It was not unpleasant when all was said and done, though I deduced from that feeling of exhilaration that it had a higher oxygen content than earth air.

We three men had scarcely been put through our paces than the other doctor returned with the women-folk. We compared notes while the two doctors held some sort of a consultation with Bo-Kar. Our experiences had been more or less identical, but neither Arabella nor Marian seemed to have grasped the precise significance of the experiment, so I explained as well as I could. Bo-Kar interrupted us in the middle of it.

"You need have little or no fear," he said, "that the atmosphere of our world will affect you adversely. Though for your own sakes I would warn you against undue excitement or violent exertion until you have become thoroughly acclimatized. Our lighter gravity in comparison with yours and the exhilaration the air seems to cause you might lead you to place an undue strain on your organs before they have properly adjusted themselves. Your servants will also be tested in due course, though I have no doubt there will be no trouble with them."

I had given the boys little or no thought of late. Once I had satisfied myself that they were being well treated and had nothing to worry about I felt I had done my duty. But now it came back to me that they were in a sense a responsibility, and I could not quite see them fitting into any place in the civilization of Mars. No doubt we would have to keep a close watch over them to make sure they did nothing to offend the susceptibilities of the local inhabitant.

Our own ordeal, however, was not quite over. The medicos had not yet finished with us, and presently we were taken into a sterilizing chamber, where ourselves and all our belongings were very carefully disinfected. Evidently Mars was taking no chances of malignant germs from other worlds being let loose to work havoc amongst her population.

THAT done, however, we were free to go our ways. Bo-Kar suggested that, as we were entering the Martian atmospheric envelope and the shutters sealing the side windows were being drawn back, we might like to look upon the new world we were approaching. It was an offer that we gladly accepted.

Norna joined us in the observation room, a curious smile on her face, I noticed, as she met Retallick's eyes, and I concluded she had been sent along to point out anything of interest to us.

As we stared about us I was presently able to make out some considerable distance away from us, but dropping level to the planet beneath, the form of the sphere. I had known that she had been in tow, a comparatively easy operation in her almost weightless condition in free space, but I had to admit myself puzzled to see her now, apparently progressing under her own power.

Norna, however, solved the mystery for us. The Martian engineers, who had boarded the sphere, had begun by sealing the cracks with their welding rays, and once they had made her airtight they installed a number of gravity plates. The sphere was now being drawn to Mars by the force of the planet's attraction, while at the same time the gravity plates were being manipulated to retard the pull sufficiently to allow of her making an easy landing. The same method was being used to bring the craft we were on safely to the ground. The difference between the two vessels in actual practice was that our rocket engines allowed us to cruise if necessary, whereas the sphere was more or less in the position of a descending balloon.

In response to another question Norna told us that the experts on board had made little progress as yet with the strange metal books we had found on the sphere, and she added with a wry smile that she did not expect any definite result to be reached until they were placed in the hands of some Martians in Ilan whose names she mentioned. I gathered from that that she had no very high opinion of the experts we had on board.

WE earth people have always pictured Mars as a world of red deserts covered by a net-work of canals, a conception no doubt popularized by the work of Schiaparelli and Lowell.* I had expected to see thousands of miles of gleaming waterways, speckled here and there with green oases. I was scarcely prepared for what I saw. There were no red deserts, no gleaming waterways of any sort.

Instead I might have been looking down on the roof of a vast greenhouse, a conservatory covered with red glass, save that it seemed to absorb the rays of the sun rather than reflect them. At regular intervals what looked like very wide canyons showed between the glass roofs. I gasped at the sight of it. The canals of Mars were not canals at all, but wide roads driven north and south and east and west in mathematically straight lines as far as the eye could reach, and dividing up the glass-covered area with almost geometrical exactness. The wide roads themselves gave off a glint as of polished stone, and every now and then I caught a glimpse of some swift, mechanically propelled vehicle speeding along one or other of them.

Retallick exclaimed, as we all did, at the sight spreading out before our eyes.

"Why, Norna," he cried, "it looks as if your whole planet is under glass."

"That," she said calmly, "is exactly what it is."

"But why?" I asked.

"OUR trouble," she said slowly, "is not so much lack of water as of heat. We have a far colder climate on the whole than you of earth. During the day, even in our equatorial regions part of which you see now, the temperature seldom rises above fifty degrees." (Actually she gave the figures in Rocan terms, but for the sake of clarity I have transposed them into their equivalent measures in English.) "It falls back to freezing point by sunset and during the night it is very cold indeed." She gave a little shiver. "Nearer the polar regions we sometimes have in the neighborhood of one hundred and twenty degrees of frost. Centuries ago when it was seen that our planet must one day succumb to the great cold over the greater part of its surface, our scientists set to work to devise some means of combating the danger, and as far as possible conserving the sun's heat. At last after much experimenting they hit on the glass, you see. Its outer surface is dull and absorbs all the energy of the sunlight, the inner surface is so prepared that it prevents the trapped sunlight from radiating back into space. Practically all the habitable area of our planet is covered thus."

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* Schiaparelli actually used the word "canali,' i.e., channels, to describe what he saw. The English rendering of the Italian word as "canals," a careless translation by the way, has doubtless been responsible for the fixed idea that these channels or lines must necessarily be water-ways.

"But that doesn't mean," I said, "that you are more or less like prisoners in a vast glass house?"

"Not altogether," she told us. "In certain parts of the planet all the year round, and in other parts at certain seasons of the year, it is possible in the day time to open large sections of the glass. But of course the cultivated area must be kept covered always and the temperature properly regulated."

"And water?" I asked her. "I don't see any anywhere."

"Have I not told you," she returned with a little movement of impatience, "that it is the cold we have to combat? We have no lack of water, though we know it best in solid form as ice, for it is on the polar ice-caps we rely for our greatest supplies. Still at certain seasons of the year, we do get rain and what there is of it is caught and conserved against need. For the rest at stations we have on the edge of the polar caps the ice is melted and piped underground all over the planet."

Marian exclaimed and caught my arm. "Look," she cried, "the roof seems to be opening!"

I looked where she pointed, and sure enough a large section of the glass roof was sliding away, revealing beneath a great patch of greensward. I could dimly distinguish the faint, spidery figures of Martians themselves, scattered about the green.

"That," said Norna," is where we land."

Slowly we settled into the great maw the opening in the glass had revealed; with marvellous exactness brought up in the dead centre of the green, and sank gently to rest on Martian soil. The sphere followed a little more clumsily because of the difficulty of manoeuvring so ungainly a craft in such a limited space. Nevertheless it at length landed a hundred yards away from us.

The glass sections slid to again above our heads, shutting out the yellow sunlight, and leaving us bathed in a warm crimson glow that somehow felt curiously soothing to our nerves as much as to our eyes. Perhaps that was because in filtering the light through the glass they had managed to deprive it of its harmful undulations.

A few minutes later the great ports of the space-ship were thrown open and our little party, conducted by Bo-Kar, Norna and our old friend Thrang, stepped out, and for the first time in the history of our world men of our race and color set foot on the soil of an alien planet.

CHAPTER XV

The Second Satellite

OUR arrival was expected, and all possible arrangements had been made in advance. For the past couple of days an almost constant stream of messages had been going out to the shore stations, giving the fullest details of the trip.

The emotion of curiosity, long dormant in a world as old, as settled and as orderly as Mars, had been kindled again by the news that not only was the returning space-ship bringing with it specimens of intelligent and reasonably advanced human life from the planet earth, but that it had also fought with, overcome and captured an inter-space vessel hailing from some as yet unidentified body of the cosmos.

So great was the interest shown in us that scarcely had we set foot to ground when we were met by a battery of whirring machines from portions of which great sparks flickered. Norna had warned us in advance that moving and talking pictures would undoubtedly be taken of us at the first opportunity, so we knew what to expect. Still it was a curious sensation to stand there and to realize that we, who had been more or less nonentities at home, would presently have our living, speaking likeness flashed around the whole circumference of the planet. A world would halt in its work to watch and listen to us.

We each said a few appropriate words, spoken in halting Rocan, and then in English, the whirring machines stopped, the flashing sparks died away, and, feeling very much as animals must feel at the Zoo, we were hurried by our escort away from the fire of thousands of curious eyes.

In a half-dazed condition, both from the crowds and the unwonted exhilaration of the strange Martian air, we were taken into a building that it was explained to us was a species of rest-house, not unlike one of our hotels, and given a chance to collect our thoughts. Rooms had been set apart for our requirements, and obliging Martian attendants explained the workings of the establishment to us.

Some time later when we had cleaned the metaphorical dust of travel from ourselves and had made a meal of sorts, we gathered in the common room. None of us had the faintest idea what was going to happen next.

"WHAT I would like to know," said Arabella, "is what's going to be done with us. The sooner we can get back to earth the better I'll be pleased. I've no fancy for ending my days in a greenhouse." That was her contemptuous reference to the fact that the greater part of the planet was roofed in with glass, from which I gathered that she had recovered some of her old fighting spirit, now that she felt her feet once more on some kind of earth.

"I'm very much afraid," her husband told her, "that for once we're not our own masters. It strikes me we'll have to stay here just as long as our hosts think fit. I guess I've seen worse than they, though. My opinion of them has changed a bit recently. I suppose it's because we're beginning to feel more at home with them."

"If you'd only get over the idea that they're regarding you as prisoners, you'd get on even better with them," Retallick said bluntly.

Spain swung round on him. "It's all right for you to talk, young fellow," he said, not without reason. "You seem to have established rather special claims to their regard."

Retallick grinned cheerfully. " I suppose you're referring to Norna. Well, you're right in that as far as it goes. But Norna isn't the whole Rocan nation, you must understand, and her own influence mightn't extend far beyond her own family. We'll see though when we decide what to do. Up to date we haven't made up our minds whether to stop here for good or go back and live on earth."

"Then," I said, "it is decided that we are going back?" In my own mind I had little or no doubt of the ultimate outcome, but I felt like having my ideas confirmed if it was at all possible.

Retallick nodded. "You don't think they intend to keep you here for good, do you?" he retorted. "We're a curiosity at present, but that will soon wear off. I can't imagine anyone wanting to keep us here for the sake of our company."

"You speak for yourself," said Arabella acidly. "I haven't come to my time of life to have things like that hinted at me. I know my tongue——"

"Never mind that now, Arabella," Spain interposed. I fancy he was afraid of antagonizing Retallick, whom he no doubt regarded now as a sort of friend at court. "I'm sure Mr. Retallick didn't mean anything of the sort."

"Of course, I didn't," Retallick said, "and only a . . ." He bit the sentence off quickly, as though he suddenly realized that the less said the better for the sake of peace.

I tried to pour oil on troubled waters. "You were saying something about the possibilities of returning to earth once they'd got over their initial curiosity about us," I remarked. "I don't suppose you're talking altogether without the book—I mean you're most likely repeating what you and Norna have already discussed between you—but have you any way of getting a rough idea of when our return is likely to take place? In other words is our stay here going to be a matter of weeks, months or years?"

HIS face clouded at that. "You're right," he said, slowly, "in thinking that Norna and I have talked it over, and that she's told me practically all she knows. There's no doubt whatever that the Rocans mean to return us to earth, as soon as they conveniently can. But there's a snag in the way, and I think I'd better put it as bluntly as possible. The duration of our stay depends on what their experts discover when they've had a chance to thoroughly study the sphere and what we found in it."

"But what's that got to do with us?" I protested.

"I don't know," he admitted ruefully, "and Norna wasn't able to learn either. But she did tell me she overheard some of the experts comparing notes and from what she could make out they seemed to be discussing what they called 'the second satellite.'"

The thought of Mars' two moons, Phobus and Deimos, jumped to my mind instantly, I explained. "That's probably what was meant," I suggested, "but which of them they'd call the first and which the second is beyond me."

"That would simplify things immensely, if that was the case," Retallick told us. "But it looks as if you're away off the track, Harper. Norna was emphatic that they were referring to earth."

"But that's all bosh," I said sharply. "We've only the one satellite, the moon. If we had another we'd have known about it long ago. I'm sure Norna's slipped up on that for once."

"That's what I thought," Retallick admitted, "but as the idea didn't occur to me until after we'd finished talking, I haven't had a chance yet of putting it up to her."

"I see. By the way," I went on curiously, "how do you happen to know so much of what has transpired in the last hour or so? It appears to me that you've been talking of things that must have occurred since we were brought in here, and I'm willing to swear that Norna hasn't been along or that you haven't been out to see her in the interval?"

"Quite correct," said Retallick, agreeably. "If you do care to swear to it, you won't be committing perjury. Nevertheless we have seen and talked to each other in the interval."

I was nearly going to point out to him that one statement directly contradicted the other, but I looked at him again and decided I had better let him explain before I said what was in my mind.

"But how?" I asked.

"Voice and vision," he said "A sort of general communicator affair, a combination of telephone and television. There's one in every room. I wonder they didn't show you."

He glanced round him, finally pointing to a plate of opaque glass set into the wall. There were some buttons to one side of it, but I had not noticed them before. The thing itself had looked to me like some sort of a ventilator, but, as I knew nothing about its precise functions, I had taken care to leave it alone.

"That's one," Retallick informed us. "Like to see it at work?"

He did not wait for an answer, but crossed the room to the glass screen and examined the various buttons beside it. Each was colored differently from the others, probably to denote its particular function. He selected the red one at length.

"That links us up with a sort of general news-service, I believe," he said. "I vote we see what's going on."

"GO ahead," I told him. After all it was a new experience and at the worst might keep us from thinking too much about ourselves.

It did nothing of the sort. On the contrary.

Retallick pressed the red button. The opacity of the screen suddenly vanished, and it lit up exactly like the stage of a theatre just before the curtain rises. I had a sense of vague shapes, too dim for recognition, moving against the lighted background.

A voice boomed out so suddenly and so realistically that we started. The speaker might have been in the room beside us, his enunciation was so clear. He spoke a trifle quickly, however, and it was not easy for us to follow what he was saying. I gathered though that he was announcing some interesting item of news, for there was a suppressed eagerness in his voice that communicated itself to us.

On a final flourish of words, something like 'Let them speak for themselevs,' the voice faded out. The screen began to glow more brightly; a scene became visible, then figures, and lastly a confused murmur of voices.

"Why," cried Marian abruptly, "it's the landing!"

So it was. We could see the crowd awaiting the arrival of the space-ship and the sphere, and high up in the thin clear air the two craft themselves, the one glowing and golden, the other battered, silver, round, gashed by a dark streak where the Martian engineers had sealed the crack.

A perfect landing both vessels alighting as easily as swooping birds, then the door of the space-ship swung open disgorging its human complement. Bo-Kar appeared in the foreground. He halted a moment, his face grew larger as the eye-pieces of the recording machines focussed on him, and he said a few words of greeting and explanation to the Martian nation. A successful trip, contact with new peoples, specimens brought back, and an adventure or two: that was the sum and substance of what he said. A flash and he was gone, the screen showing blank for a moment.

It lighted up again almost instantly. The eye-pieces this time had concentrated on the little group of five of us.

Retallick chuckled softly, as the humor of the sight tickled him.

"Good God," said Spain, "did we really look like that?"

I stared at our screened figures with distaste. We looked awkward and uncertain in our movements; our stained and dilapidated earth clothes formed a disreputable contrast to the loose, brightly colored tunics and shorts of the Martians. Spain's face was twisted into a grin; his wife looked grim, and, I was surprised to see, even formidable in a way. For myself I can say nothing very good. My eyes were screwed up, no doubt to shield them from the flashing sparks of the recording machines, and altogether I wore an expression of somnolent bewilderment, as though I had just been roused from a sound sleep and had not yet got my bearings. Marian looked better; there was a calmness and a sort of sweet placidity about her face that more than atoned for my own looks. Retallick, however, showed up the best of us all. The man should have been a film actor.

It was given to him to cap it all with a final insult. "Disgusting lot of beggars, aren't we?" he said, quite well aware that, Marian excepted, he was the only one to show up to any advantage.

Nobody answered. The one thought that must have run through all our minds was a shocked, "Do I really look like that?"

But there was worse to follow. I had forgotten the few words we had been asked to say. Our own voices came back in judgment on us. The clipped quaint Rocan we used, the English version sounding so horribly banal and uninspired, mocked at us from the annunciator by the side of the screen. If anything was needed to prick the bladder of our pride we found it in that last final touch.

"NICE representatives of earth we are," I said with an edge of sarcasm in my voice. "What a picture to give the Martians as representative of our race!"

Marian caught my arm. "Look," she said, "there are our Solomon boys now."

We had faded from the screen, and in our place came our half-dozen native boys, frightened, bewildered, unable to understand what it was all about, trying desperately to adjust themselves to this planet with the thin, exhilarating air and the surprisingly lessened gravitational pull. Our attempts not to take liberties with our lighter weight had resulted in making us look awkward. Every movement or gesture the boys made on the the other hand landed them in queer difficulties; they made no allowance for the fact that less muscular exertion was required on Mars to get the same result as on earth.

Even their muttered scared sentences had been recorded by the machines. As they faded away I caught the tag-end of a remark from Narada to the effect that this was a world of devils and that they, meaning the boys, were all bewitched.

"Switch it off, for Heaven's sake," Arabella said. "Enough of that goes a long way, Mr. Retallick."

He held his hand up for silence as the voice of the announcer boomed out again, and the screen darkened momentarily.

"Just a minute," he said in a quick whisper. "I fancy there's something interesting coming through. About the sphere," he added.

He picked up Rocan more readily than the rest of us; he seemed to have a natural aptitude for languages, besides which he had had rather more practice, whispering sweet nothings to Norna, I suppose, than we had been able to get, so we had to rely a good deal on his interpretation of what followed. I could catch the general drift of it, however, and my own version agreed in essentials with his.

First the sphere moved into the centre of the screen, with the announcer explaining it all as it went along. Then close-ups were shown of various portions of the interior, the giant engines, the chart- and observation- rooms, and last but not least the grim figure of that gigantic unclothed black sprawling in frozen death across the table at which he had been working, when the cold of space crept in and caught him in its grip.

It was the first Spain and Arabella had seen of our late antagonist and they exclaimed in horror and disgust, but the fascination of the sight kept their eyes glued to the screen. Even we, who had been on board the sphere and seen the actual scenes with our own eyes, were hardly less affected.

I've no intention of giving a mere catalogue of all we saw, of the metal books and so on, all to the accompaniment of the running comment and explanation of the announcer. Enough to say that at the end, after enlarged sections of plates from some of the books had been shown for the benefit of the planet-wide audience, we were given some of the conclusions the experts had apparently drawn in the limited time at their disposal.

From what we heard we gathered that the experts had not yet been able to decipher the conventional signs in which the books were printed—mentally, I decided it might yet be an altogether impossible task—but from the illustrated matter they had drawn certain conclusions, and when to these they added facts discovered by the Rocan anatomists who had overhauled the bodies of the sphere's crew they felt justified in publishing their results.

TO our way of thinking their conclusions, if at all reliable, were startling indeed, but apparently the Rocan scientists did not think so, for the report was put over in a way that suggested that they were dealing with more or less commonplace matters. For instance, it seemed a matter of common knowledge that earth possessed two satellites, Vinto, the moon, that is, and another they called Ados.

"But, of course," I remarked, "that's all bosh. Our astronomers would have found that out long ago, if that were the case."

The others were inclined to agree with me, particularly Arabella, whose instinct it was to deny the existence of anything she couldn't see with her own eyes.

For generations, the announcer went on, the Rocan astronomers had known this, but they had never looked on Ados as a possible abode of life. Such observations as they were able to make from such a vast distance had led them to believe that Ados, like the moon, was a dead world. The recent expedition had to some extent confirmed this, though it had made no attempt to go near Ados, but had contented itself solely with investigating the possibilities of the moon as a source of desirable minerals.

Charts discovered in the metal books, however, had provided convincing evidence that the sphere had hailed from the second satellite, and further illustrations justified the deduction that the inhabitants possessed a fairly high if somewhat ruthless type of civilization. The reasonable supposition was that any operations of a war-like character, the Adosians contemplated, were more likely to be directed against earth than Mars, but, the report went on, if anything of the sort was projected the people of Roca, for a number of reasons, could not stand aloof.

It must not be supposed that the sphere captured was the only one in existence, indeed from certain indications—this I took to be a reference to what I had told Bo-Kar about the calls I had heard—it was reasonable to conclude that others were at large. If that was so, they must be dealt with as speedily as possible.

The reasons summed up, why Mars had to take an active part in clearing the void of a possible menace, were more or less as follows: The Rocans meant to establish an oupost on the moon, and possibly later a mining colony, and this was almost certain to lead to conflict with the Adosians, before or after they made their supposititious move against earth. The peoples of the planet, earth, were disorganized, to the extent that they consisted of many and varied races, most insanely jealous and distrustful of each other, and with absolutely no means of making provision for inter-spatial warfare, and in consequence would fall an easy prey to the invader. None the less they were more closely akin to the Rocans than were the inhabitants of Ados, and for that reason sympathy would incline towards them. Again any race of planetarians bent solely on ruthless conquest was a menace to the rest of the solar system, and such a race must be deprived of their power to inflict harm on their neighbors in space. That the Adosians were not merely harmless explorers, was amply clear from the fact that they had taken no notice of the Rocan signals, which to any intelligent being would have indicated the space-ship's peaceful intentions, but had gone out of their way to initiate hostilities.

Personally, I thought I saw a flaw in the reasoning there, but since it told in our favor rather than against us it was not wise to raise the question.

The actual report ended on the note above, but certain other details of interest, apparently emanating from another source, were added for the further enlightenment of listeners. For the first time I learnt not only that the earth had a second satellite, but was able to get some particulars of it, and presently, as we listened, a plausible reason why our astronomers were unaware of its existence made its appearance.

ADOS, we heard, had a diameter roughly two-thirds of that of the moon, but size for size its mass was considerably less. No wonder then that the Adosians had been built so massively. They would need fairly heavy bodies to anchor them to a planet with such a light gravitational pull as theirs must possess. Like the moon, too, Ados moved continually with the one face presented outwards and the other turned in the direction of the earth. In other words it made a complete revolution on its own axis once in twenty-eight days, a period exactly coinciding with the moon's axial revolution, with the result that as the moon circled round the earth Ados proceeded behind it, ever masked by the bulk of Luna from the prying telescopes of terrestrial astronomers. I did not quite grasp the significance of the mean distances given; they were in Rocan terms with which I was as yet not very well acquainted, but as I had occasion later to obtain them I might as well give them here in their proper place.

From calculations made by the Martian astronomers it seemed that Ados was roughly 370,000 miles from the moon, which gave her a mean distance of approximately 620,000 miles from the earth. A dark planet, seemingly a dead world, for ever occulted by our major satellite, she had been observed for years by the Martians; now it seemed that some hidden life in it had decided to make itself manifest. I would have liked to have heard more about this mysterious neighbor of ours, but the announcer was talking to a Martian audience, already informed on many points of which we were ignorant, and his work done he cut out.

It was impossible, much as I would

have liked it, to doubt the figures we had heard. The Martians were ahead of us in stellar observation and their knowledge of celestial mechanics seemed more profound. Of course the absence of moisture in their atmosphere and the thinner air of their planet removed one of the chief obstacles to astronomical observation as we know it on earth. The percentages of errors due to atmospheric refraction would be considerably less, too.

As the announcer ceased Retallick pushed the red button again, an action that cut off sound and vision. Then he turned to us.

"Well," he said, as if some of the credit for what we had seen were due to him, "what do you think of it?"

I could think of only one thing, of that revelation which had come so stunningly to us, and for all his showman's manner I fancy that that was what he actually meant. At any rate his face was graver than was its wont.

"If the Martians aren't making a horrible mistake," I said, trying to keep my manner as light as possible, "it looks as if our part of the solar system is in for a rather blue time."

"That's putting it mildly," Retallick returned. "In fact the only good part of it is that the Martians came to earth when they did. That, to me, looks rather like the hand of Providence."

CHAPTER XVI

Getting Acquainted

BUT when we came to talk it over with Bo-Kar and the others, things did not seem so bad as they had appeared at first sight. The Adosians, as it was now more or less definitely established the crew of the sphere had been, as far as we could see had made no preparations for launching a space Armada. We had encountered only the one machine, and at the most we could only say that we had deduced the existence of another. The hope in our hearts was that they were still experimenting.

I had another hope, a private one that I did not care to breathe to a living soul, that any offensive that might be contemplated would not be directed immediately against the earth. The Martians had more than once mentioned their wish to establish workings on the Moon, and the communicator broadcast had spoken of the likelihood of the Adosians using that dead world as a sort of half-way house in any operations against earth, and had gone on to foreshadow the possibility of conflict arising between the two races as the result of their aspirations. Either race, established on the Moon, was a danger to the dreams of the other; both possessed the secret of space-flying, which would put a yet keener edge on any rivalry that developed, and I imagined that the stronger would try to push the weaker to the wall before devoting time and attention to exploiting earth. I had no deliberate wish to see the Martians faced with the horrors of inter-spatial warfare, but if it came to a direct choice I would much prefer that they be the sufferers rather than ourselves.

In the days that followed we were taken about a good deal, partly to show us the planet, and partly that we might be shown to the planet's inhabitants. Most of our traveling was done on the open roads in the day-time, for, as the afternoon drew in and the sun began to slant, it grew far too cold for us to be abroad. The Martians themselves would remain out later than we dared, but they were all protected from the weather and insulated against the cold by suits similar to the space-suits we had worn on our visit to the sphere. These, however, were heavy and cumbersome and anyway the authorities did not encourage wayfarers at night.

I was rather surprised to find that the Martians had not developed any species of flying machine for use on their own planet. The internal combustion engine was unknown to them, and no experiments had ever been made on those lines, principally because they lacked oil supplies. With the diminution of the water supply they had discontinued the use of the steam engine, and even now that science had provided a means of keeping the water supply drawn from the polar areas more or less constant they had not reverted to it. Apparently they looked on steam power as not only wasteful in itself, but as merely a crude experiment on the road to better things. As it was now, practically all the energy they required was drawn from the sun itself; the glass-covered area, which amounted to nearly the whole of the planet, was one huge sun-trap. In some fashion never made plain to me they were able to store this energy and at very little cost transform it again into either light or power.

The swift wheeled vehicles that traversed the main roads of the planet were driven by batteries containing this stored energy and even allowing for the lighter pull of gravity on the surface of Mars, they reached speeds that seemed to us almost incredible. The machines, which were motor-cars on a larger and more sumptuous scale, were made of the same light yet strong and shimmering metal as was the shell of the space-flyer and they were capable of carrying tremendous loads of passengers and freight at relatively high speeds over enormous distances.

THE glass-covered areas were subdivided at regular intervals by roads or streets of about a chain (66 feet) in width, and were used merely for what I might call suburban communication. The main roads, the great arteries of the world traffic, were, however, enormous things. The smallest, I should say, was at least a mile in width, and the streams of traffic they carried from sunrise until late afternoon dwarfed anything I have ever seen anywhere. I have never taken the matter up with an astronomer of earth, but I should not be surprised if it was these roads, viewed through the telescopes, which had first given rise to the fable of the Martian canals.

I have mentioned that Ilan, where we landed, was well within the Martian tropics, and in that equatorial belt was gathered all that was best and most progressive on the red planet, and it was here that we saw most of interest. Our travels, however, were not confined to this particular zone; we were taken both north and south right to the rim of the polar ice-caps and saw all that the authorities judged it wise for us to see.

On the rim of the polar caps, where great sun-ray stations had been erected, beams similar to that used on the space-ship were developed from great reflectors, and directed as required on the ice. The actual heat they generated could be graduated to a nicety, which was just as well. Otherwise the solid ice might have been turned incontinently into steam instead of being melted down gradually to water as the demand dictated.

Something of the sort might one day be adapted for use in our own polar regions with happy results. Unless we develop some new form of energy on earth and find substitutes for metals that must, as time goes on, become increasingly rare, the Antarctic Continent with its vast stores of mineral wealth will have to be opened up. I can think of no system at present operative on earth by which this could be done in comfort and with minimum risk to life and limb. Perhaps while there is yet time we can learn from Mars the engineering secrets that they prefer at present to keep to themselves; an exchange of this sort may even be made the basis for an agreement over the concessions they desire on the Moon.

In so highly developed a community I had expected to find some knowledge at least of atomic energy, but that seemed to be one branch of experimentation they had entirely neglected. I tackled Thrang about it on one occasion. I had considerable difficulty in making him understand what I was driving at, and it was not until I began what I'm afraid must have been rather a lame explanation of the atomic theory that he grasped what I meant.

Then he told me rather a surprising thing. The theory of atomic energy was no new thing to them, he explained; they had even succeeded something like a thousand years ago, I judged, in partially liberating that power, and "this," he said, sweeping an arm about, "is the result."

It was an indefinite gesture he made, that might well have embraced the whole planet, and for the moment I was at a loss to understand.

"What is?" I asked bluntly.

"THE present condition of our planet," he said sadly. "It was a force that even when partially released had the power to blast and wither. It turned the greater part of the planet from a garden to a desert. The inventor himself was killed very early, and his work-shop became a spouting inferno of flame that threatened to spread across the entire surface of the planet. We did manage to isolate it to a great extent, by building walls of a non-conducting substance around it, but we dare not roof it over. For one thing we were afraid that the pent-up energy would burst its way out and make things even worse than they were. The walls we had constructed, you see, remained non-conducting only so long as the energy was able to escape upwards. Yet that very energy spouting skywards behaved like the material shot from a volcano, and spread and spread until it looked at last as if there would be no habitable spot left on the whole round of our planet."

"But you must have got rid of it at last," I said. "How did you manage that?"

"Desperate ills require desperate remedies," Thrang told me. "We only got rid of it by sacrificing a portion of our planet itself. Volunteers were especially called, and starting from a good distance away they began to mine towards the center of the disturbance. When their instruments told them they were directly under it they placed enormous charges of powerful explosives there, explosives specially designed to have an upward thrust, closed the tremendous cavern they had made, and retreated, sealing the passage behind them as they went. It all had to be calculated out to a nicety, and the explosives set to go off by time machines, as for reasons I need not go into, we dare not explode them by electricity from a distance. Roughly we could not have anything between the mine and the mine-head that would act as any sort of a conductor. The cavern itself had to be insulated on all sides save the top and the mine-sap (weathered rock) was packed with non-conducting material.

"AT the exact moment calculated the explosion took place. The whole of the affected area, nearly a square mile in extent, was blown clean out of the planet into space. But even in ridding ourselves of this menace we nearly brought about another catastrophe. The area precipitated into space, which had become in effect a stellar missile, passed close to our inner satellite, which you call Phobos. Some back-draught, some manifestation of the atomic energy, so speeded up this little moon of ours that now it performs three revolutions for every one its mother planet makes.*

"And since then?" I asked, interestedly.

"Since then," Thrang went on, "we have allowed no experiments to be made with the atom. Some later experiment might succeed too well, and finish what the first began."

"But the . . . the, let us call it a stellar missile," I said. "What became of it?"

Thrang made a vague gesture. "It passed," he said simply. "Somewhere out in the ends of space no doubt it ceased to be. Though, perhaps," he went on thoughtfully, "for all we know it may still be flaming away light years beyond us.** At least we soon lost sight of it, and its ultimate fate held no interest for us."

CHAPTER XVII

The Great Decision

TIME passed. The months dragged slowly by, until at length nearly a year had elapsed since our departure from earth.

We were treated well. Within limits we were given everything we asked for, but definite information on the one thing we most wished to know—the possibility of our being returned to our own planet—was denied us. It was not for want of asking. But every time any of us sought to know, we were told, though not unkindly, that the matter had not yet been decided, and that we must wait in patience. Even Retallick could learn nothing. Norna either did not know or would not tell him—which, he was not sure of.

The matter of the Adosians had not been raised again, and I was beginning to wonder if after the first scare the Martians had decided that there was nothing in it. I did discover, however, that Ados itself was being kept under close observation, and that at certain intervals roughly about once a month—when it was the nearest, and earth the furthest away of the three bodies—conditions for observation became favorable. But when one recollects that these observations had to be conducted over an average distance of sixty million miles of space it is not to be wondered at, that nothing of a very conclusive nature emerged immediately from them.

Ados it seemed had, no apparent atmosphere, but even that was not conclusive. It might be so tenuous as not to be readily discernable, and from its position in the heavens, when it occulted a star it was impossible to determine whether the gradual disappearance of the latter was or was not due to the refraction of the earth's atmosphere. It may seem a matter of little moment, once we had decided Ados was inhabited, whether it possessed an atmosphere or not, but actually a good deal hung on our solution of the problem.

Terrestrial science had established that life cannot exist without air, and to a great extent this is true. Lung-breathing animals must have air; plants require it for their existence, and even fish life must of necessity take it from the water in which it lives. The great lung capacity of the Adosian bodies, which the Martian anatomists had examined, showed that they were used to breathing a thinner atmosphere than even that of Mars, but what it did not show was whether such atmosphere as there was, was surface or subterranean, natural or artificial. In other words the Adosians might have reached the stage of development where they could produce air synthetically. Or again as their atmosphere departed from the surface they might have begun burrowing into the interior of their world, and with the help of their natural science have staved off the disaster threatened by the desertion of the air. We did not know the extent of their powers.

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* Mars makes a complete revolution on its axis once in about twenty-four hours. Deimos, the outer satellite, takes thirty hours eighteen minutes to make a complete revolution around Mars, while Phobos, the inner satellite, revolves round the planet once in seven hours, thirty-nine minutes, that is it performs about three revolutions every Martian day. Compare the time—twenty-eight days—taken by the moon to revolve round the earth.

** Light year, a convenient measure for astronomical distances. Light travels 186,000 miles a second. A light year is the distance light will travel in a year.

If they existed and sustained life on a natural surface atmosphere, however tenuous it might be, the odds were probably slightly in the favor of the Martians if hostilities broke out, but in the event of either of the other suppositions proving correct it foreshadowed a scientific grasp of the natural forces that might well make them very formidable enemies indeed. But, as one of the Martian astronomers put it, why should we take it for granted that because two out of all the stellar bodies were particularly adapted for the existence of air-breathing mammals, that such should be the case right through the length and breadth of the universe? It might even be that we were in a minority and such life as existed in other solar systems managed to get on very nicely without air as we knew it.

QUITE a revolutionary theory, it seemed to me, but then all theories that run counter to one's experience seem revolutionary the first time one hears them.

Then one day when we had almost become resigned to a continued existence on Mars a communicator message came through to the effect that Bo-Kar would call on us at the midday hour that day and that we were to hold ourselves in readiness to accompany him to an audience.

The bald announcement threw us into a flutter, the more so as we hadn't the faintest idea what lay behind it. We all felt that it was too much to hope that a move was going to be made at last to transport us back to earth, yet we could not see what else it could be.

Retallick had been out most of the morning, and he came in, about half an hour before Bo-Kar was timed to arrive, looking rather glum and down in the mouth, I thought.

I gave him the message. "Oh, Bo-Kar," he said sourly, "damn him!"

"A nice way to talk about your prospective father-in-law, isn't it?" I hinted.

"Father-in-law be . . . ." He choked on the end of the sentence, and his face flushed.

I waited. I felt I would get all I wanted to know much quicker if I let him have his head, than if I tried to force it out of him. After a pause he glanced up and met my enquiring eye.

"Sorry, Harper, it's not your fault, but you caught me on the raw. You see, I've just left Norna. For the umpteenth time I've been pressing her to marry me. So far she's always managed to evade giving me a direct answer, had one sort or another of excuse that I always felt wasn't the real one, but to-day, I put it straight to her. Finally I got her to admit that it wasn't her fault, that she was willing to marry me tomorrow—to-day, if I pressed the matter—according to the rites of either of our races. The snag in the way, however, was her father, Bo-Kar, himself. She could not marry without his consent, and so far she hadn't been able to get him to give it.

"'Why not,' I suggested, 'do without it?'

"It was the only time I'd ever seen her shocked. Then she explained. It wasn't done on Mars. One respected one's elders. One might not agree with them, but one didn't deliberately disobey them. Seems it's the sort of primitive ancestor worship one wouldn't expect to find on an advanced planet like this. However, I didn't say that as I didn't want to make bad worse. I contented myself by asking her what Bo-Kar had against me.

"Nothing," she told me, "except that I was an Earthman, not a Rocan. Bo-Kar seemingly regards me as some sort of an inferior animal."

"I wouldn't say that, Retallick," I told him. "It's probably not true, anyway. Put yourself in his place. Suppose you had a daughter and some being from a strange planet, a man of an alien race, whose ways and thoughts and everything that counted in life were utterly different from yours, asked her hand, wouldn't you hesitate, even if you didn't feel in your own mind doubt as to the outcome?"

"I suppose I would," he admitted grudgingly. "But I know that our case is different."

"All cases are," I said sententiously. "But, you see, the trouble is that Bo-Kar can't project himself into your mind. He's looking at possibilities through his own eyes, not yours."

"You're a Job's comforter, aren't you, Harper?" Retallick said in rather a nettled tone. "Well, it's not all over yet, not by a long way. I mean to have it out with the old man himself."

I nodded. "Probably the best thing you can do. I wish you luck. But—don't try to bounce him."

He looked at me sideways, rather like a startled horse. I was not at all sure but that that had been his original intention.

"You can be sure I'll do what I think best," he said stiffly, and let the matter drop.

Bo-Kar was announced shortly afterwards. He seemed in considerable excitement, that is, for him, and that gave me the idea that something of importance, about which we had as yet heard nothing, must have happened quite recently.

He got to the point straightaway. He had orders to take us direct to the Council; we were to appear before the Three and answer such questions as they thought fit to ask us.

"The Three?" I exclaimed. I have not mentioned them before in this narrative, just as I have omitted all reference to the Martian system of government, simply because it had been of no immediate concern until this moment.

ROUGHLY, the passage of the centuries had knitted the various Martian races into a compact nation. They had experimented with various forms of government, tried kings, discarded them; achieved something on the republican model and found it wouldn't work, and at length came to the conclusion that a benevolent despotism was about the most satisfactory form they could find. Possibly it would have been such, except that one cannot always rely on despots to be benevolent all the time. I should imagine from what I've been told that it became one of the dangerous Martian trades, principally because an outraged population has a nasty habit of getting out of hand at inconvenient times. The result was that soon there were no offers for the job, and it seemed as though a state of chaos would ensue. This, on dates, I should fancy would have been about the time those experiments with atomic energy were beginning to take form, and it was probably the result of that last one that brought the planet under the form of control which still exists to-day.

The original scheme was the organization of a board of control, made up of three scientists, but, after the atomic disaster, scientists lost a little of their popularity. They were still regarded as pretty useful citizens, but it was felt that their impetuosity should be curbed a trifle. So it came about that the Board of Control, later to be known as the Council, contained one scientist only. The second member was almost always drawn from the professional or trading classes in order to give some ballast to the Board, and the third was usually a writer of some sort, a novelist or romancer, by preference. No doubt the originators of the idea fancied that a man of this type would be more or less impartial and used to conceiving operations on a grand scale, also he would supply the necessary imaginative drive to make the Council a force to be reckoned with. Absurd as it looked at the start, the scheme had worked well for several centuries, and, the Martians, who should be the best judges of its value, had no desire to experiment in other directions.

It was to this particular body, none of whom we had yet met face to face, that Bo-Kar was taking us, with what object we had not yet elicited. I would have asked him point-blank, but before I could frame the words of my question Retallick cut in ahead of me.

IN the simplest manner possible he had managed to cut Bo-Kar out from the herd, and the moment he claimed his attention he broached the matter that was uppermost in his mind. It was not the sort of thing I could have done with others looking on and able to hear a good deal of what was said. But Retallick was an opportunist; most probably he felt he might not get another chance of cornering Bo-Kar, and so he reached out and seized the chance while he could.

The women-folk had already left the room to put the finishing touches to their preparations before setting out with us, and we four were left alone. Had I guessed at the start what was transpiring I would have edged out also and taken Spain with me, but Retallick began by talking in a voice that did not carry to us; it was only as he got excited that his tone grew louder, and by the time we realized what it was all about, it was too late to slip away.

As I say we heard nothing of the start, and for the rest only about half of what Retallick said, for every now and again he recollected himself and dropped his voice, but as he gave us the whole affair in detail later on it may as well go in here in its proper place.

He began by asking Bo-Kar point-blank why he objected to Norna marrying him. Bo-Kar told him, with equal bluntness, that it was because he belonged to another planet.

Retallick followed that up by enquiring was that all Bo-Kar had against him. The Martian hesitated—probably he was comparing in his mind the states of development the two planets had reached, with results not altogether flattering to Retallick—but he made the fatal mistake of allowing his natural sense of courtesy to over-ride his regard for exactitude. He agreed that that was all he had against Retallick, and added that the Earth-man should have known better than to have fallen in love with Norna, when he realized the gulf, material and otherwise, that separated the two worlds. Retallick retorted that this wasn't due to any fault of his; whatever blame there might be, rested solely on Bo-Kar himself.

At this point I fancy the Martian must have realized without quite understanding what it implied that he was floundering in deep waters. You see, the

Martian civilization had developed more or less on strictly utilitarian and scientific lines; they treated the people as a homogeneous body, rather than as a collection of individuals of varying temperaments and characteristics. Probably this system worked quite well on Mars, and indeed the average Martian citizen had altogether lost touch with differing psychological possibilities as we know them on earth. He could not comprehend the individual save as a cog in the machine. No doubt Bo-Kar had begun with the idea that Retallick would realize, as a sensible man, that what was best for the majority was best for the individual. He reckoned without that particularly human kink which makes an Earth-man, who is in love, think the world well lost if he gains the girl of his choice. I know I've put it rather badly, but presently, no doubt, you will begin to see what I mean.

Bo-Kar seemed taken aback at the suggestion that any blame there was, was attributable solely to himself. It was something he could not understand and naturally he immediately sought enlightenment.

"Well," said Retallick, "we didn't ask to come with you. Not to put too fine a point on it you kidnapped us."

"I felt I was bringing you a better and more advanced civilization," Bo-Kar answered, puzzled.

Retallick chuckled. He began to feel the dry land under his feet, and he was quick to see that Bo-Kar was getting out of his depth.

"I'M not denying your good intentions," Retallick returned. "I know you and your people well enough now to realize that you wouldn't go out of your way to do harm to innocent and inoffensive folk. Nevertheless the fact remains that you took us away from everything we were used to, put us down in a strange world to which we haven't properly adjusted ourselves even yet, and then ask us why we feel hardly done by. The others are in a worse state than I. They've discovered no compensatory advantages, while I have. Yet you want to take away from me the only thing that will make life here worth while and console me for the world I have left behind me. Even if you sent me back to earth now, things would never be the same for either of us. Norna could never think the same of anyone as she does of me, and the same applies to my feelings for her. If you want it in a nut-shell, you've lit a fire in two worlds that nothing can ever put out."

Bo-Kar looked thoughtful at that. Whether he believed everything Retallick said or not, of course I can't say, but I fancy the young man's earnestness must have had considerable weight with him.

"You've put the situation in quite a new light," he said frankly. "Yet there is no precedent for what you suggest."

"Of course there isn't," Retallick agreed. "This is the first time anything of the sort has happened, but it's almost certain not to be the last. You have the interests of your planet at heart; you are reaching out to our Moon, earth's territory, and sooner or later you must come into peaceful conflict with our folk. How are you going to get on, how even achieve toleration if you take up the attitude that you are a race apart, not to be sullied by marriage with an Earthman? Put it the other way about. Suppose in the future some of your men should wish to marry Earth-women. Are we in our turn to take the attitude that our two races must never mix?"

It was a bold speech, this of Retallick's; that is, if he said all he claims he did. As I have already emphasized, I could hear but a word here and there. But it had an effect on Bo-Kar. Beneath his outer austerity he was a kindly man, and I fancy that a good deal of what Retallick said opened his eyes to our possible real feelings as regards our transportation. Perhaps that swayed him; perhaps, too, he felt that anything that antagonized us now would militate later on against a peaceful settlement of those problematical mining rights on the moon. Retallick, with his forceful ways and his ready intelligence, must have loomed a larger figure in Bo-Kar's conception of our world's economy than he really was. I do not say he deliberately deceived the Martian, but I am inclined to believe that he allowed him to think that the part we might play in swaying the councils of our own globe was no mean one.

"What you have said," Bo-Kar remarked after a fateful pause, "puts a new complexion on the situation. It may well be that in the interests of Roca this matter should go forward to the end you desire. But I make no promises in that regard. The decision is one as much for the Council as for myself."

And there he left it. Retallick, like a wise man, made no effort to follow up the advantage he had gained. Better results would be obtained by allowing the seed he had sown to germinate in Bo-Kar's mind. Not that there was much doubt of that. It would have been obvious to a duller man than Retallick that Bo-Kar had already made his great decision—one that broke through the age-long traditions of his planet—but preferred, naturally enough under the circumstances, that the sanction for it should come from the Council rather than from his own lips.

A few moments more and Marian and Arabella rejoined us. We were ready to face the Council and learn from them the reason that prompted them, after nearly a year of inactivity, to summon us to their presence.

CHAPTER XVIII

The Expedition

THE distance to the Council building was but short. We walked it, Bo-Kar and his attendants leading the way. Retallick seized the opportunity to drop behind a little and give me some idea of what had transpired between him and the Martian. He thought, he said, that it was just as well for us to know all about it, as he had a feeling it might have some bearing on the events of the day. At least it would not hurt us to know how matters stood.

I had never seen the Councillors in the flesh, but their faces were familiar to us, for several times we had heard and seen them over the communicator. They met us in a small, bare room, one that would at a pinch hold twenty-five or thirty people, and they bade us to be seated. I ran my eyes over their faces, striving to read there something of what their thoughts might be.

Garno, the scientist member, was the youngest of the trio, a little lighter in color than his fellows—a grave, silent personage who, however, could talk to the point when the need arouse. The professional representative, Shagun, was old in point of years, though he had a singular freshness of expression; but it was towards Nonda, the third of the three, my eyes most often strayed. He did not strike me as a man of letters. I would have been hard put to it to label him. There was an evasive, or, more correctly, an effervescent quality in him that defied description. But summed up, what impressed me most about the three was their balance, the unison of their thoughts, and the aptitude with which they grasped a view-point alien to them.

Besides the three there were present

five or six others, some of whom I was able to recognize, others of whom were strangers to me. But the thing that struck me most about the gathering was that everybody there, with the exception of ourselves, was an expert of one variety or another.

Shagun, as the senior member of the Council, opened proceedings without preliminary the moment the formal introductions were over, and came to the point at once.

Their astronomers, he told us, had been keeping Ados under close and constant observation ever since our landing, and for the greater part of that period had seen little or nothing of interest. Within the last month or so, however, certain indications of activity had appeared on that world's surface.

Before he outlined what those evidences were, he explained to us that Ados went through phases similar to those of the Moon, so that it was only during those parts of the month when it appeared full from Mars that the observations were of the highest value. In recent weeks the silver surface had been broken up, or rather spotted in places, by odd manifestations of light. At times these were green and at others red, and there seemed to be some significance in the fact that the two colors on no occasion showed at the same time.

The Martian telescopes, even with their greater magnification, had failed to reveal the cause of these spots. Continued observation showed that the red ones disappeared after a few days, while the green ones began to spread and presently merged into each other, so that the ultimate effect was as though the whole surface of Ados was covered by a greenish haze.

In addition, sensitive instruments of the type used to detect the cosmic (Milliken) rays had evinced curiously disturbing features. They appeared to be recording the play of magnetic forces that it seemed could only radiate from Ados. In the circumstances there was ample justification for the belief that the inhabitants of Ados were preparing some inter-stellar armada on a huge scale, and spectroscope and thermocouple tests—the latter an instrument for detecting the heat of planetary bodies—seemed to indicate that the green haze was some kind of a vibratory screen, whether offensive or defensive had not definitely been determined.

But with all this evidence of presumably inimical activity going on, Mars could not sit idly by. Its future as well as earth's was bound up in the outcome. The offensive must be taken before it was too late, and to that end the fleet of space ships, that had been secretly building ever since Bo-Kar's experiment had proved successful, would be placed in commission. It seemed that a closer investigation of the queer behavior of Ados was demanded; whether a conflict would arise from that, remained to be seen, though the people of Roca would endeavor not to provoke trouble idly.

Shagun moved a little in his seat, coughed and eyed us. "I have made the position clear, I trust," he said.

NO one spoke. All eyes turned to me. Spain nudged me. "You'd better do the talking, Billy," he said.

I felt myself turning red. "I gather, sir," I said haltingly, "that the inhabitants of Ados are preparing some sort of surprise that might well involve all the solar system."

"That admirably sums up the situation," Shagun agreed. "Your peoples of earth are more vitally interested in the matter than we because of their nearness to Ados and the possible desirability of their planet from the Adosians' point of view. On the other hand, as far as our own researches can be relied on, we seem to be the only planet in the solar system sufficiently advanced to resist the invaders; by reason of our position in the scale of development, we must sooner or later clash with them, and it were better that this should happen before rather than after they have consolidated their position.

"Our attitude is not dictated solely by altruism towards the earth peoples, but still more by a consideration of our own position. Nevertheless we would have no hesitation in helping our sister planet, even had we nothing to gain. But as we have something to gain we would wish to drive a bargain as the price of our aid. It is that we might place the position before you that we have called you here to-day."

He paused and again looked at us as though expecting me to reply. Seeing there was nothing else for it, I said, "In what way can we—those of us here, I mean—help you?"

Again Shagun. "Bo-Kar tells me that you are already aware of our aspirations concerning your moon. There is no need to enlarge on that, save the concessions we wish to be a portion of the bargain. But tell us in how far your people can aid us in a campaign against the Adosians."

He had me stumped there. The plain truth was unpalatable, but with those three pairs of keen dark eyes boring into me, seemingly reading my very thoughts, I felt I could do no less than tell it.

"I think the greatest problem will be to convince them, first, that there is such a body as Ados; and, secondly, that they can possibly be in any danger from its inhabitants. As for their ability to aid you in any way I cannot speak of that; I am no scientist, and I do not know what discoveries jealous and suspicious nations may be hiding from each other." I ended breathlessly, as the enormity of what I was saying dawned on me.

SHAGUN looked rather surprised. I think he had expected a wholehearted agreement with his suggestions—an offer, perhaps, made by us on behalf of our world. No doubt, too, he was a little bewildered at a state of affairs so different from that on his own planet.

Bo-Kar took a step forward. "May I speak?" he asked, and when assent had been given he went on: "The peoples of earth are not one but many nations. They differ in language, in customs and in color. Each nation fears and distrusts its neighbors, and international jealousies are fed and fanned by certain men for their own ends. Or at least that is my interpretation of information that has come to me."

From Retallick, *via* Norna, I assumed. As a matter of fact I was right, as I discovered later.

"Our friends, I believe," he continued, "cannot claim to speak for any but their own people, but as these are the most enlightened in their world, the most powerful, and the ones spread most widely over the globe, two great nations speaking the same tongue, though one is ruled by a king and the other is a republic, such as we once had here, it might well be that what we desire will be forthcoming. Nevertheless, since they are proud peoples, these two great nations, quick to resent injuries or injustice done to their citizens, it is not at all unlikely that they may say that in the first place we had no right to remove Earthmen at all from their planet."

I could see the hand of Retallick in this. I imagine even that Bo-Kar was repeating some of his own views on the world in general.

"Is that so?" Shagun asked me.

I thought I had better say "Yes," and I did.

"If you"—he addressed us all in general—"were returned safely to your planet and the inconvenience you have undergone made up to you, would you be prepared to use your influence on our behalf amongst your people?"

I was on the point of agreeing to this, when Retallick caught my arm. "Leave me out of this," he whispered almost fiercely. "Here's my chance if you do."

"Yes," I said boldly to Shagun. "All of us, save one."

Ba-Kar gave a start. I think he sensed what was coming now.

"And that one?" said Shagun in his calm, even voice.

Without a moment's hesitation Retallick stepped forward. "I am that one," he said, "and I beg of you to hear what it is I have to say."

"Speak on then," Shagun said.

"MY friends are agreeable to your proposal," Retallick said, sweeping us with a glance. "I, too, am agreeable to it, save that I wish something for myself. What my gift is I think most of you know or guess already, but I would like the opportunity of pointing out now how the granting of my wish will aid rather than hinder the project you have in view. I beg of you therefore to hear me to the end.

"I wish to marry Norna, daughter of Bo-Kar; she wishes to marry me, but will not run counter to the custom of her world. I say that there is no such custom; there cannot be any such, for I am the first Outlander to ask for the hand of a Rocan girl. Alien from you in thought, word, habit and deed I no doubt am, but we are made in the same image and likeness. Our peoples are slow to be convinced but quick to suspect. None the less if I were to come to earth the husband of a daughter of Roca, and say, "She is of the people who ask this of you. She has come to me from her planet across the void, and by that act our two worlds are made one.' Do you not think then that our people would see that your aims are of the highest, your intentions peaceful, your wishes that earth and Roca may live side by side in peace and friendship, each helping to increase the other's store of knowledge?"

In a way he was not far wrong. Given the right impetus and the right amount of publicity, such a planetary love tale might well seize the imagination of a world and sweep it from end to end. Even the heard-headed Martians were moved, no doubt because they looked on us as greater sentimentalists than we really were, and so saw bigger possibilities ahead.

"It is a big thing you ask," said Shagun cautiously, though something told me the scales had already swung in Retallick's favor.

"It is a big thing I ask from Norna, daughter of Bo-Kar, that I grant you," Retallick answered. "But from you, no. I merely ask you that you kill a 'custom' not yet born, that you lay aside a prejudice before it has time to form, and show that in your hearts as in your minds you are truly great."

An earthly audience would have cheered. These Martians merely inclined their heads. Yet Retallick's words had got home; that I knew now without a doubt.

"But," Shagun spoke up, "there is yet Bo-Kar to hear on the matter."

"I have little to say," Bo-Kar told him. "Almost I am persuaded to consent now, but I think it only wise that Norna should speak for herself."

"There is no need for that," said Retallick. "I have her full consent and permission for this that I am saying."

"Nevertheless," said Shagun in mild reproof, "it were well that the formal declaration be made in the proper time and place, which is not here. The maid must speak for herself in this matter, as"—his lip curled wryly—"it has been known before that maids can change their minds. But, subject to that, we have reached agreement?"

Retallick nodded. "As far as I am concerned, yes," he said. "My friends have already spoken. I do not think they will go back on their words."

"We will not," I declared, "though I wish it to be clearly understood that we speak for ourselves alone. We cannot claim to speak for others. We cannot claim to sway the councils of our governments. We can but put the position before them. And in that regard I would like to say a word or two more. Sad to say, the peoples of our planets are notoriously skeptical—with a few exceptions—of the existence of life other than that on their own globe. That it should be superior to them in many ways and certainly inimical, they may find it hard to believe."

"They will see our ships and our people," Shagun interrupted. "Is not that enough?"

"NOT quite," I said. "But if I tell you what is in my mind you may see how that can be overcome. I suggest that pictures be prepared, anything in fact that will carry conviction of the standard of civilization on this planet, that records of your observations be also prepared, and that on our way we pass as close to Ados as is consistent with safety and photograph that body also. In addition, gruesome though it may seem, if the preserved body of one of the Adosians be brought back with us for our anatomists to examine, it would, I think, provide the final convincing evidence of the truth of what we say."

Shagun inclined his head. "That shall be done," he said. "We ask no one to believe what may seem to them well nigh incredible things, without ample proof of their truth being provided. The fleet is being fitted out. In little less than a week it will be ready to cross the void. In the meantime may the Architect of the Universe watch over you."

It was so patently a dismissal that we turned about. Bo-Kar signed to us to follow him, and led us from the room.

"You are free to go your way in the meantime," he said. "I must return, however, for there are other matters concerning me still left undiscussed."

He left us. We earth people turned to each other with joy in our hearts, for in our several ways we had at last achieved our desires or saw ourselves within measurable distance of their realization. There was none to tell us that our troubles were only now beginning.

End of Part II

The Man Who Stopped the Earth

By HENRY J. KOSTKOS

This story, by one of the recent acquisitions to what we may call our staff of authors, is very short, but will be enjoyed greatly by our readers. There is much art in the production of a very short story to make it a true narration and bring it to a crisp ending. Our author has certainly succeeded in keeping up what used to be called the unities and brings about a good climax.

SOLEMNLY the three grey bearded old men filed through the door into the dim interior of the laboratory. The grim lines on their faces did not relax as they gathered around the amazing combination of coils, wires, motors, tanks and tubes that filled the large room in studied disorder. The bluish glow from a mercury vapor lamp illuminated the meter dials on the dull black switchboard and cast a weird tint over the wrinkled faces of the three scientists. A musty odor, that might have come from a newly opened tomb, hung like a blanket of death over the scene.

As his stooped frame bent low over the galvanometer of the electron gun Markrum said:

"There is much danger, Rizzurt, in performing the Great Experiment."

The man he addressed pushed this long hawk-like features close to Markrum's face. His eyes were alive with a thousand pin points of fire and his sallow skin reddened into an angry flush.

"Did I not tell you that not a single inhabitant of the earth will be harmed? Must I repeat the test over and over again to convince you? Wirrtel has no childish doubts, why should you have any?"

Wirrtel looked sidelong at Markrum, his white beard sweeping across his chest.

"Rizzurt is right. I have no doubts. But to convince yourself, make your own tests."

Markrum dropped his head in resignation. With a heavy heart he started the small high tension generators which lit up the tubes of the atom isolagraph. There was a silvery tinkle of broken glass as his nervous old hand knocked over a small flask, then taking a grip on himself he dexterously made a series of adjustments.

Then he straightened up and shuffled towards the control board, the nails in his shoes scraping audibly over the titles of the laboratory floor. Rapidly he threw a switch in and out and swiftly read the oscillating needle on the galvanometer dial. Each reading he entered in a scrawly hand on a pad of paper, while his two colleagues watched with glaring impatience.

Finally Markrum was satisfied. He sat down at a bench, and lost himself in intricate calculations. The two waited but said nothing. Then Markrum glanced up; his voice was harshly discordant:

"I have repeated your experiment, Rizzurt. Much of your wave atomic theory I am in perfect agreement with.

But there is a serious error in your atom equation. The complex quantity *psi* that you interpret as . . . ."

"Enough of your insults, Markrum. How dare you make me out as an incompetent dabbler? I am the great scientist Kirkland Rizzurt; take care how you speak to me," he bellowed, his beard bristling as he thrust his chin pugnaciously towards the other. Then with a toss of his head he added defiantly. "The Great Experiment will take place at once! I have locked the door; you can not get out."

Rizzurt stood upright under the mercury vapor lamp, his face sinister with a fanatic light. Then like one pronouncing a sentence of doom he shouted above the banging of the shutter as the night wind outside whistled under the eaves of the frame building. A flash of lightning foretold the coming of a storm and distant thunder rumbled menacingly above the tearing of the wind.

"There must be no further delay. The time for the Great Experiment has come. I WILL NOW STOP THE EARTH!"

MARKRUM'S rheumatic old frame shivered as if he were cold. Wirrtel tightened his grasp on the edge of the laboratory table; beyond this he showed no emotion. But Rizzurt had been transformed into a creature of eyes, great fiery red, flaming, fanatic orbs; they became quizzical, inquiring, more rational, then pleading, as the man lowered himself heavily to a stool, more like a tired old man, weary of the world, burned out, unhappy. . . .

"Ah, Markrum, Markrum, if you would only understand. Here in our hands we have the means of doing a wonderful thing. Our earth moves in a complex path; it rotates, travels in its orbit around the sun, the sun carries us through the galactic system, the galactic system speeds us amid the spiral nebulae. . . . How fast are we going, what is our destination, what is gravity, can we exist outside of the orbit of the sun? These questions—think, man, just think—these problems, these unknowns, we can now answer."

By this time the storm outside raged with fury. The laboratory was lit up brilliantly by flashes of lightning. The three old men instinctively drew closer together.

Then Markrum said quietly with resignation, "You are right, Rizzurt. We are old men. All our lives we have labored with you to find the answer. And we grow older; see how my hand shakes as those minute cells of muscle and nerves become feeble, and are soon to die. We are not long for this world. Now I also say that the Great Experiment must be performed!"

He sat down heavily. The other two nodded their heads silently, sympathetically. With a quick practiced hand, Rizzurt pushed some buttons. In the distance the solenoid-operated remote-control switches responded. Then the great generators below began to hum ponderously. Another series of switches operated and the row of giant tubes glowed fiery red. Rizzurt drew a test arc fifty feet long, and the air was filled with the pungent odor of ozone.

Wirrtel scrutinized the meters through his silver rimmed spectacles.

"The voltage is constant, Rizzurt, and the tubes are all behaving beautifully. Now—any time—you can apply the Atomic Brake," he informed his chief.

"GOOD. The instruments that will measure our speed and direction of motion are ready. They will register as soon as I throw this switch, which will indicate that in this universe of billions of stars and planets, that tiny speck we call the earth, has stopped in its mad flight to nowhere and is content to view the aimless motions of the others," Rizzurt said philosophically.

Now, as if the elements had of a sudden become aware of these mites of men who were bold enough to tamper with the secrets of the universe, the crashing of thunder died away in a sullen rumble. The wind became soft and whining. The black thunder clouds passed swiftly across the face of the piteous white moon.

Markrum moved to the window and looked out. The clash of the last switch did not disturb him as he gazed out over a landscape now made luminous by the light of the moon. He could hear Rizzurt's labored breathing as the man bent low over his instruments.

Then without warning the orb of the moon streaked like a flash across the sky! Markrum gave a low cry and clutched his head; he was dizzy. But when he turned suddenly towards his companions he felt eased, his head did not bother him nor did his eyes. He looked outside again.

The moon was gone! And in the sky thousands of points of light had become streaks of fire!

"We have done it! We have done it! The movement of the earth is ceasing! All the stars and planets of the universe are rushing madly by. See, here on this dial," Rizzurt's voice was hoarse and the words came from his mouth, as if after great effort.

With a cry Markrum slumped to the floor. He had seen! That which he had feared had come true. The solid walls of the laboratory were crumbling into fine dust! The metal column against which his head was resting had become soft and yielding. And with horror he realized that the very flesh of his hands was wasting away, even as he gazed at them with slowly dimming eyes. He tried to see his companions; though they were but a few feet distant they were beyond the range of his vision.

"Rizzurt, Wirrtel," he called in a hoarse whisper for his throat was dry and it was agony to speak. Yet he knew that it was too late.

As if from far off came the faint answer. Was it Rizzurt's voice, or was it the voice of his own soul? He would never know. But he heard it, and with calm satisfaction he listened, listened as the roof of the laboratory crumbled and crashed down upon him, as the very floor under him became powder, as the earth itself trembled violently and slowly crumbled into dust.

"Markrum. Markrum, you were right! Did you not warn me that the atom obeyed but one law? That the atoms and the electrons are kept within their orbits by electromagnetic force that is generated only when all matter, everything in the universe, is hurling through the magnetic field of space at incredible speeds. What happens when you stop turning an electric generator? The magnetic forces cease and there is no current generated. It is thus likewise with the earth.

"You have truly evolved a stupendous theory. And I have unwittingly proved it for you, though there be none left to profit by it."

Then as Markrum's old body shriveled until nothing but the eyes seemed to be alive, those eyes flashed out for the last time over the world that had ceased to be. Those eyes had looked upon the breaking down of matter into its molecules, then the molecules became atoms, and as the chemicals of his flesh and bone united with the soft plastic substance that was once the earth and the fulness thereof, these atoms broke into their constituent protons and electrons and then like a puff of smoke under the open sky, these charges, too, ceased to be.

Where the planet earth was but a few minutes before, now there was nothing but void.

FAR out in interstellar space, beyond the galaxy of stars that included the solar system, an observer might have witnessed a strange and inexplicable phenomenon. Not that the complete annihilation of such a minute speck as the earth would have been noticeable at such a great distance, but a star, the Sun, changed its position in the constellation of which it was a part and assumed a new location, while its solar system unbalanced by the loss of a planet, sought erratically to heal its wound. For the cosmic systems must balance.

THE END

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. What apparently trivial experiment led to the development of the dynamo? (See page 9.)
2. What was the derivation of the word "electricity"? (See page 10.)
3. What was the great and revolutionary invention of the Scottish engineer, James Watt? (See page 11.)
4. Is there any analogy between the first condensing steam engine and the gasoline and Diesel engines of the present day? (See page 11-12.)
5. If blood from the veins was colorless, what would be implied? (See page 16.)
6. What can be said about the relation of matter and inertia? (See page 20.)
7. What is the speed of light? (See page 43.)
8. How do light waves compare with radio waves? (See page 43.)
9. What is the difference in the vibration of sound waves and light waves? (See page 44.)
10. Is the speed of sound waves the same in all media? (See page 44.)
11. What is the approximate speed of sound waves in air? (See page 44.)
12. What are the principal castes of Driver Ants? (See page 48.)
13. How old may a Queen Ant be? (See page 49.)
14. How is the gravitational attraction of a planet calculated? (See page 93.)
15. What is the relation of the size of Jupiter referred to the size of the earth? (See page 93.)
16. Calculate the gravitational attraction of Jupiter for bodies on its surface compared to that of the earth. (See page 93.)
17. What misconception of the famous astronomer Schiaparelli's views about the "canals," of Mars, is due to an erroneous or poor rendering of the Italian word "Canali"? (See page 99.)
18. What is the time of a revolution of the planet Mars? (See page 110.)
19. What is the time of rotation of its planets about Mars? (See page 110.)
20. What is a light year? (See page 110.)
21. Describe the various movements of the earth in space? (See page 121.)
22. How would the sidereal bodies appear if the earth were stationary? (See page 122.)
23. How would the loss of a planet affect the solar system? (See page 123.)
24. What effect would be anticipated from highly variegated clothing? (See page 126.)

A Job of Blending

By VICTOR ENDERSBY

A very interesting phenomenon of subjective optics is brought out in this story. It is what some readers may consider too vivid a portrayal of the seamy side of life, but it is certainly very well done and has a very interesting bit of science in its few pages.

"FAT JAKE" lurched through the doorway and folded two creases of his checker-vested belly over the edge of the counter. His choice in textiles was nearly as offensive to the little tailor, who now laid down his book with a trembling hand, as were a number of other things.

Jake eyed him around the sides of a bulging nose in a sinister manner, coughing lightly.

"Jake, I—I just couldn't make it. I'll get it together as soon as——"

"Now looka here, Manderson, last month's dues is gonna have a rear-end collision with this'n in just three days. D'yuh think y'r health'll stand it? Watta hell tha matter with yuh, anyways? Ain't satisfied with tha protection yuhr gettin', huh?"

"You're all wrong, Jake. My *God,* man, don't you know what business has been like?"

"*I* ain't had no trouble with business, fella," remarked Jake significantly. "Maybe if yuhd keep yuhr nose out f'r business instead of inna book—highbrow stuff, huh?"

He pushed the opened book off the counter with one finger, after reading the title with contemptuous incomprehension. Thus nonchalantly did he flick a chip from the shoulder of death, who took up the challenge; instantly, but as is often his custom, very, very quietly.

Manderson stooped quickly to pick up the book, more to conceal the uncontrollable hatred in his face, than to rescue his property. But he kept his eyes averted to hide the dark flame of inspiration which suddenly had kindled there.

"Listen, Jake," he said after a moment. "I've got a proposition."

"It better be good. I'm listenin'."

"Say, Jake, how would you like to have a suit such as no man in this town ever wore before?"

"Nah! If I start collectin' dues in trade—whaddya mean, a suit like no man ever wore before?" He changed his note, curiosity and vanity joining hands.

"Tell you what I'll do, Jake. I'll take your measure now, and when you come for next month's money, you take your suit for both payments if you think it's worth it. If you don't—well, I'll just have to scratch it up somehow."

Jake pondered this with porcine suspicion, failing to find any holes in it from his point of view——

"Awright. Git outcha tape. Remember, strictly no obligations, huh?"

"No obligations whatever. What could I do about it anyway?"

"Yuhr right. What couldja do about it anyway?" grinned Jake.

JAKE surveyed the remarkable array of cloth before him with profane astonishment.

"Well, wottahell——"

"Now, Jake, just hold everything until

you get it on," said Manderson. "You'll get the idea then."

Jake did. What had looked somewhat like a crazyquilt on the counter, turned out to be a symphony in color-combinations which would have pleased a far more discerning eye than Jake's. Taken one by one the various features of the chromatic structure of the new suit—the working in of varicolored pocket-patches, the oblongs of shading, sugtive of futuristic design, and the rest, seemed like sartorial insanity. But taken in the *ensemble*—not only was the thing harmoniously striking; it slimmed up Jake's blimp contours in the most astonishing manner. Manderson's unsought customer was struck dumb with something akin to awe.

"Gawd! I wonder if I dast to wear it? I'm scared th' boy'd just kid hell outa me. I wish——"

"Maybe they will. And then again maybe you'll set a new style. *You* know it's *right*, don't you?

"Yuhr dam tootin' I do. Fella, watta *you* doin' in this little two-by-four jernt?"

"That's what I'm beginning to wonder myself," grinned Manderson. And if there was just a little sinister touch in his pleasure, it was quite lost on Jake.

THE gang's reception of the new suit was far from unmixed; but victory perched on Jake's banner when Lupinetti, the Big Push, ordered a modified duplicate from Manderson. Lupinetti, being accustomed to trembling trepidation on the part of the small fry whom he "protected," never suspected that Manderson's symptoms of jitters at the receipt of the order were those of a fisherman who has caught a shark with a line intended for mudsuckers.

Some few days later Jake entered the room over the pool hall wearing a cane and an air of severe dissatisfaction with the world.

"Hey, punk," he greeted one of the youngsters. "Wottahell's the idea of givin' me tha runaround at Watterson's today?"

"Whatdaya mean, tha runaround? I never sawya."

"Hell yuh didn't! Yuh was lookin' straight at me, not ten feet off!"

"Yuh musta been stewed, Jacob. How could I ha' missed yuh in that rig?"

Innocent of Biblical learning, the reference to "Jacob's coat" which some learned member had set about his ears never failed to irritate.

"Aw-w-w!" he snarled, "yuhr as blind as these damn drivers. And, say, listen Chief! That's somethin' else. Yuh gonna let one uh tha mob get hit twice in a week an' do nothin' about it?"

"Them that ain't quick are the dead," grinned Lupinetti. "Sometimes I think yuhr gettin' too damn fat for the racket, anyway!" He eyed Jake in an uncomfortable manner. The latter subsided, paling slightly.

MANDERSON, with intense but mingled emotions, was reading a news item which ultimately found its way into Ripley's omnivorous "Believe It or Not."

" . . . . The traffic jinx which has pursued the 'Lupinetti Tailor's Protective Association,' beginning with the death of 'Fat Jake' Stolzwein last Thursday, was exorcised by Captain Wheeling's investigations following the killing of Lupinetti himself yesterday. It appears that the bizarre style of clothing, affected by the Lupinetti mob, of late, renders the wearer almost invisible against the average city background. Captain Wheeling was led to this discovery by the testimony of over a dozen eyewitnesses, including the traffic officer on duty and three passengers in the car, that no one saw the victim until the moment of impact. Captain Wheeling states that he will ask the Traffic Bureau for authorization to conduct an extensive series of tests on color combinations in clothing. He believes that this factor plays a hitherto unappreciated part in the frequency of traffic accidents."

The little tailor, perusing this between terror and exultation, began throwing his possessions into a suitcase, including a short shelf of books whose titles betrayed an odd taste for a man of his humble occupation.

"The Romance of The Atom:" "Elements of Astronomy"; "Relativity"; "Paroptic Vision," and the like, ran the titles. His quick fingers paused to run reflectively over the gilt letters of the last. "The Subjective Qualities of the Human Retina; With Some Studies On the Military Value of Camouflage. By Brunau-Stauer."

THE END

The Corona of the Sun

ANOTHER scaffolding, moldy with age, was being pounded to splinters by Drs. Donald H. Menzel of Harvard Observatory and J. C. Boyce of Massachusetts Institute of Technology. Since 1869 the light of the sun's spectacular corona, trapped in spectroscopes during the scant seconds of a total eclipse, has produced on the spectogram five mysterious bright lines. Astronomers deduced that the corona, though mostly scattered sunlight, was partly self-luminous. What element made it so? Not knowing, they called it "coronium." As recently as last year, in a standard work on eclipses, "coronium" was treated with respect. The Menzel-Boyce report unmasks it as mostly oxygen in bizarre atomic metamorphoses.

The normal oxygen atom has eight orbital electrons. Menzel and Boyce proceeded to imagine oxygen atoms in such a state of excitation that electrons could skip freely from one orbit to another. Such excited atoms, according to quantum theory, should have energy levels differing from each other by precise amounts. Drs. Menzel and Boyce expressed a number of these energy levels mathematically. Then (by extrapolation of the 43-year-old Rydberg method) they mathematically expressed the light-wave frequencies represented by the five mysterious spectrum lines.

Last, they brought the two sets of mathematical expressions together. In three cases the correspondence was close enough to remind them of keys fitting into locks to enable them to say that most of "coronium" is oxygen.—*Time.*

We quote the above from the weekly publication *Time* of New York. Dr. Menzel is or should be known to our readers as a leading astronomer. He has held himself ready to help AMAZING STORIES when it is in trouble with such things as curved space, the Lorenz-Fitzgerald contraction, the Three Point problem and other similar matters which arise from time to time.—The Editor.

MS. Found in a Bottle

By EDGAR ALLAN POE

[1833]

Qui n'a plus qu'un moment à vivre
N'a plus rien à dissimuler.

QUINAULT, *Atys.*

OF my country and of my family I have little to say. Ill usage and length of years have driven me from the one, and estranged me from the other. Hereditary wealth afforded me an education of no common order, and a contemplative turn of mind enabled me to methodize the stores which early study very diligently garnered up.—Beyond all things, the study of the German moralists gave me great delight; not from any ill-advised admiration of their eloquent madness, but from the ease with which my habits of rigid thought enabled me to detect their falsities. I have often been reproached with the aridity of my genius; a deficiency of imagination has been imputed to me as a crime; and the Pyrrhonism of my opinions has at all times rendered me notorious. Indeed, a strong relish for physical philosophy has, I fear, tinctured my mind with a very common error of this age—I mean the habit of referring occurrences, even the least susceptible of such reference, to the principles of that science. Upon the whole, no person could be less liable than myself to be led away from the severe precincts of truth by the *ignes fatui* of superstition. I have thought proper to premise thus much, lest the incredible tale I have to tell should be considered rather the raving of a crude imagination, than the positive experience of a mind to which the reveries of infancy have been a dead letter and a nullity.

After many years spent in foreign travel, I sailed in the year 18—, from the port of Batavia, in the rich and populous island of Java, on a voyage to the Archipelago of the Sunda islands. I went as passenger—having no other inducement than a kind of nervous restlessness which haunted me as a fiend.

Our vessel was a beautiful ship of about four hundred tons, copper-fastened, and built at Bombay of Malabar teak. She was freighted with cotton-wool and oil, from the Laccadive islands. We had also on board coir, jaggeree, ghee, cocoanuts, and a few cases of opium. The stowage was clumsily done, and the vessel consequently crank.

We got under way with a mere breath of wind, and for many days stood along the eastern coast of Java, without any other incident to beguile the monotony of our course than the occasional meeting with some of the small grabs* of the Archipelago to which we were bound.

One evening, leaning over the taffrail, I observed a very singular, isolated cloud, to the N. W. It was remarkable, as well for its color, as from its being the first we had seen since our departure from Batavia. I watched it attentively until sunset, when it spread all at once to the eastward and westward, girting in the horizon with a narrow strip of vapor, and looking like a long line of low beach. My notice was soon afterwards attracted by the dusky-red appearance of the moon, and the peculiar character of the sea. The latter was undergoing a rapid change, and the water seemed more than usually transparent. Although I could distinctly see the bottom, yet, heaving the lead, I found the ship in fifteen fathoms. The air now became intolerably hot, and was loaded with spiral exhalations similar to those arising from heated iron. As night came on, every breath of wind died away, and a more entire calm it is impossible to conceive. The flame of a candle burned upon the poop without the least perceptible motion, and a long hair, held between the finger and thumb, hung without the possibility of detecting a vibration. However, as the captain said he could perceive no indication of danger, and as we were drifting in bodily to shore, he ordered the sails to be furled, and the anchor let go. No watch was set, and the crew, consisting principally of Malays, stretched themselves deliberately upon deck. I went below—not without a full presentiment of evil. Indeed, every appearance warranted me in apprehending a simoon. I told the captain my fears; but he paid no attention to what I said, and left me without deigning to give a reply. My uneasiness, however, prevented me from sleeping, and about midnight I went upon deck.—As I placed my foot upon the upper step of the companion-ladder, I was startled by a loud, humming noise, like that occasioned by the rapid revolution of a mill-wheel, and before I could ascertain its meaning, I found the ship quivering to its centre. In the next instant, a wilderness of foam hurled us upon our beam-ends, and, rushing over us fore and aft, swept the entire decks from stem to stern.

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* A lateen rigged Arabian coasting vessel, usually two masted, and used in the Eastern Asian Archipelago.

The extreme fury of the blast proved, in a great measure, the salvation of the ship. Although completely water-logged, yet, as her masts had gone by the board, she rose, after a minute, heavily from the sea, and, staggering awhile beneath the immense pressure of the tempest, finally righted.

By what miracle I escaped destruction, it is impossible to say. Stunned by the shock of the water, I found myself, upon recovery, jammed in between the sternpost and rudder. With great difficulty I gained my feet, and looking dizzily around, was, at first, struck with the idea of our being among breakers; so terrific beyond the wildest imagination, was the whirl-pool of mountainous and foaming ocean within which we were engulfed. After a while, I heard the voice of an old Swede, who had shipped with us at the moment of our leaving port. I hallooed to him with all my strength, and presently he came reeling aft. We soon discovered that we were the sole survivors of the accident. All on deck, with the exception of ourselves, had been swept overboard;—the captain and mates must have perished as they slept, for the cabins were deluged with water. Without assistance, we could expect to do little for the security of the ship, and our exertions were at first paralyzed by the momentary expectation of going down. Our cable had, of course, parted like packthread, at the first breath of the hurricane, or we should have been instantaneously overwhelmed. We scudded with frightful velocity before the sea, and the water made clear breaches over us. The framework of our stern was shattered excessively, and, in almost every respect, we had received considerable injury; but to our extreme joy we found the pumps unchoked, and that we had made no great shifting of our ballast. The main fury of the blast had already blown over, and we apprehended little danger from the violence of the wind; but we looked forward to its total cessation with dismay; well believing, that, in our shattered condition, we should inevitably perish in the tremendous swell which would ensue. But this very just apprehension seemed by no means likely to be soon verified. For five entire days and nights—during which our only subsistence was a small quantity of jaggeree, procured with great difficulty from the forecastle—the hulk flew at a rate defying computation, before rapidly succeeding flaws of wind, which, without equalling the first violence of the simoon, were still more terrific than any tempest I had before encountered. Our course for the first four days was, with trifling variations, S. E. and by S.; and we must have run down the coast of New Holland. —On the fifth day the cold became extreme, although the wind had hauled round a point more to the northward.—The sun arose with a sickly yellow lustre, and clambered a very few degrees above the horizon—emitting no decisive light. —There were no clouds apparent, yet the wind was upon the increase, and blew with a fitful and unsteady fury. About noon, as nearly as we could guess, our attention was again arrested by the appearance of the sun. It gave out no light, properly so called, but a dull and sullen glow without reflection, as if all its rays were polarized. Just before sinking within the turgid sea, its central fires suddenly went out, as if hurriedly extinguished by some unaccountable power. It was a dim, silver-like rim, alone, as it rushed down the unfathomable ocean.

We waited in vain for the arrival of the sixth day—that day to me has not arrived—to the Swede, never did arrive. Thenceforward we were enshrouded in pitchy darkness, so that we could not have seen an object at twenty paces from the ship. Eternal night continued to envelop us, all unrelieved by the phosphoric sea-brilliancy to which we had been accustomed in the tropics. We observed too, that, although the tempest continued to rage with unabated violence, there was no longer to be discovered the usual appearance of surf, or foam, which had hitherto attended us. All around were horror, and thick gloom, and a black sweltering desert of ebony.—Superstitious terror crept by degrees into the spirit of the old Swede, and my own soul was wrapped up in silent wonder. We neglected all care of the ship, as worse than useless, and securing ourselves, as well as possible, to the stump of the mizzen-mast, looked out bitterly into the world of ocean. We had no means of calculating time, nor could we form any guess of our situation. We were, however, well aware of having made farther to the southward than any previous navigators and felt great amazement at not meeting with the usual impediments of ice. In the meantime every moment threatened to be our last—every mountainous billow hurried to overwhelm us. The swell surpassed anything I had imagined possible, and that we were not instantly buried is a miracle. My companion spoke of the lightness of our cargo, and reminded me of the excellent qualities of our ship; but I could not help feeling the utter hopelessness of hope itself, and prepared myself gloomily for that death which I thought nothing could defer beyond an hour, as, with every knot of way the ship made, the swelling of the black stupendous seas became more dismally appalling. At times we gasped for breath at an elevation beyond the albatross—at times became dizzy with the velocity of our descent into some watery hell, where the air grew stagnant, and no sound disturbed the slumbers of the kraken.

We were at the bottom of one of these abysses, when a quick scream from my companion broke fearfully upon the night. "See! see!" cried he, shrieking in my ears, "Almighty God! see! see!" As he spoke, I became aware of a dull, sullen glare of red light which streamed down the sides of the vast chasm where we lay, and threw a fitful brilliancy upon our deck. Casting my eyes upwards, I beheld a spectacle which froze the current of my blood. At a terirfic height directly above us, and upon the very verge of the precipitous descent, hovered a gigantic ship of, perhaps, four thousand tons. Although upreared upon the summit of a wave more than a hundred times her own altitude, her apparent size still exceeded that of any ship of the line or East India-man in existence. Her huge hull was of a deep dingy black, unrelieved by any of the customary carvings of a ship. A single row of brass cannon protruded from her open ports, and dashed from their polished surfaces the fires of innumerable battle-lanterns, which swung to and fro about her rigging. But what mainly inspired us with horror and astonishment was that she bore up under a press of sail in the very teeth of that supernatural sea, and of that ungovernable hurricane. When we first discovered her, her bows were alone to be seen, as she rose slowly from the dim and horrible gulf beyond her. For a moment of intense terror she paused upon the giddy pinnacle, as if in contemplation of her own sublimity, then trembled and tottered, and—came down.

At this instant, I knew not what sudden self-possession came over my spirit. Staggering as far aft as I could, I awaited fearlessly the ruin that was to overwhelm. Our own vessel was at length ceasing from her struggles, and sinking with her head to the sea. The shock of the descending mass struck her, consequently, in that portion of her frame which was already under water, and the inevitable result was to hurl me, with irresistible violence, upon the rigging of the stranger.

As I fell, the ship hove in stays, and went about; and to the confusion ensuing I attributed my escape from the notice of the crew. With little difficulty I made my way unperceived to the main hatchway, which was partially open, and soon found an opportunity of secreting myself in the hold. Why I did so I can hardly tell. An indefinite sense of awe, which at first sight of the navigators of the ship had taken hold of my mind, was perhaps the principle of my concealment. I was unwilling to trust myself with a race of people who had offered, to the cursory glance I had taken, so many points of vague novelty, doubt, and apprehension. I therefore thought proper to contrive a hiding-place in the hold. This I did by removing a small portion of the shifting-boards, in such a manner as to afford me a convenient retreat between the huge timbers of the ship.

I had scarcely completed my work, when a footstep in the hold forced me to make use of it. A man passed by my place of concealment with a feeble and unsteady gait. I could not see his face, but had an opportunity of observing his general appearance. There was about it an evidence of great age and infirmity. His knees tottered beneath a load of years, and his entire frame quivered under the burden. He muttered to himself, in a low broken tone, some words of a language which I could not understand, and groped in a corner among a pile of singular-looking instruments, and decayed charts of navigation. His manner was a wild mixture of the peevishness of second childhood, and the solemn dignity of a God. He at length went on deck, and I saw him no more.

A feeling, for which I have no name, has taken possesion of my soul—a sensation which will admit of no analysis, to which the lessons of by-gone times are inadequate, and for which I fear futurity itself will offer me no key. To a mind constituted like my own, the latter consideration is an evil. I shall never—I know that I shall never—be satisfied with regard to the nature of my conceptions. Yet it is not wonderful that these conceptions are indefinite, since they have their origin in sources so utterly novel. A new sense—a new entity is added to my soul.

It is long since I first trod the deck of this terrible ship, and the rays of my destiny are, I think, gathering to a focus. Incomprehensible men! Wrapped up in meditations of a kind which I cannot divine, they pass me by unnoticed. Concealment is utter folly on my part, for the people *will not* see. It was but just now that I passed directly before the eyes of the mate—it was no long while ago that I ventured into the captain's own private cabin, and took thence the materials with which I write, and have written. I shall from time to time continue this journal. It is true that I may not find an opportunity of transmitting it to the world, but I will not fail to make the endeavor. At the last moment I will enclose the MS. in a bottle, and cast it within the sea.

An incident has occurred which has given me new room for meditation. Are such things the operation of ungoverned Chance? I had ventured upon deck and thrown myself down, without attracting any notice, among a pile of ratlin-stuff and old sails, in the bottom of the yawl. While musing upon the singularity of my fate, I unwittingly daubed with a tar-brush the edges of a neatly-folded studding-sail which lay near me on a barrel. The studding-sail is now bent upon the ship, and the thoughtless touches of the brush are spread out into the word DISCOVERY. . . .

I have made many observations lately upon the structure of the vessel. Although well armed, she is not, I think, a ship of war. Her rigging, build, and general equipment, all negative a supposition of this kind. What she *is not,* I can easily perceive—what she *is* I fear it is impossible to say. I know not how it is, but in scrutinizing her strange model and singular cast of spars, her huge size and overgrown suits of canvas, her severely simple bow and antiquated stern, there will occasionally flash across my mind a sensation of familiar things, and there is always mixed up with such indistinct shadows of recollection, an unaccountable memory of old foreign chronicles and ages long ago. . . .

I have been looking at the timbers of the ship. She is built of a material to which I am a stranger. There is a peculiar character about the wood which strikes me as rendering it unfit for the purpose to which it has been applied. I mean its extreme *porousness,* considered independently of the worm-eaten condition which is a consequence of navigation in these seas, and apart from the rottenness attendant upon age. It will appear perhaps an observation somewhat over-curious, but this wood would have every characteristic of Spanish oak, if Spanish oak were distended by any unnatural means.

In reading the above sentence a curious apothegm of an old weather-beaten Dutch navigator comes full upon my recollection. "It is as sure," he was wont to say, when any doubt was entertained of his veracity, "as sure as there is a sea where the ship itself will grow in bulk like the living body of the seaman." . . .

About an hour ago, I made bold to thrust myself among a group of the crew. They paid me no manner of attention, and, although I stood in the very midst of them all, seemed utterly unconscious of my presence. Like the one I had at first seen in the hold, they all bore about them the marks of a hoary old age. Their knees trembled with infirmity; their shoulders were bent double with decrepitude; their shrivelled skins rattled in the wind; their voices were low, tremulous and broken; their eyes glistened with the rheum of years; and their grey hairs streamed terribly in the tempest. Around them, on every part of the deck, lay scattered mathematical instruments of the most quaint and obsolete construction. . . .

I mentioned some time ago the bending of a studding-sail. From that period the ship, being thrown dead off the wind, has continued her terrific course due south, with every rag of canvas packed upon her, from her trucks to her lower studding-sail booms, and rolling every moment her top-gallant yard-arms into the most appalling hell of water which it can enter into the mind of man to imagine. I have just left the deck, where I find it impossible to maintain a footing, although the crew seem to experience little inconvenience. It appears to me a miracle of miracles that our enormous bulk is not swallowed up at once and forever. We are surely doomed to hover continually upon the brink of Eternity, without taking a final plunge into the abyss. From billows a thousand times more stupendous than any I have ever seen, we glide away with the facility of the arrowy sea-gull; and the colossal waters rear their heads above us like demons of the deep, but like demons confined to simple threats and forbidden to destroy. I am led to attribute these frequent escapes to the only natural cause which can account for such effect. I must suppose the ship to be within the influence of some strong current, or impetuous under-tow. . . .

I have seen the captain face to face, and in his own cabin—but, as I expected, he paid me no attention. Although in his appearance there is, to a casual observer, nothing which might bespeak him more or less than man—still a feeling of irrepressible reverence and awe mingled with the sensation of wonder with which I regarded him. In stature he is nearly my own height; that is, about five feet eight inches. He is of a well-knit and compact frame of body, neither robust nor remarkably otherwise. But it is the singularity of the expression which reigns upon the face—it is the intense, the wonderful, the thrilling evidence of old age, so utter, so extreme, which excites within my spirit a sense—a sentiment ineffable. His forehead, although little wrinkled, seems to bear upon it the stamp of a myriad of years.—His grey hairs are records of the past, and his greyer eyes are Sibyls of the future. The cabin floor was thickly strewn with strange, iron-clasped folios, and mouldering instruments of science, and obsolete long-forgotten charts. His head was bowed down upon his hands, and he pored, with a fiery unquiet eye, over a paper which I took to be a commission, and which, at all events, bore the signature of a monarch. He muttered to himself, as did the first seaman whom I saw in the hold, some low peevish syllables of a foreign tongue, and although the speaker was close at my elbow, his voice seemed to reach my ears from the distance of a mile. . . .

The ship and all in it are imbued with the spirit of Eld. The crew glide to and fro like the ghosts of buried centuries; their eyes have an eager and uneasy meaning; and when their fingers fall athwart my path in the wild glare of the battle-lanterns, I feel as I have never felt before, although I have been all my life a dealer in antiquities, and have imbibed the shadows of fallen columns at Baalbec, and Tadmor, and Persepolis, until my very soul has become a ruin. . . .

When I look around me I feel ashamed of my former apprehensions. If I trembled at the blast which has hitherto attended us, shall I not stand aghast at a warring of wind and ocean, to convey any idea of which the words tornado and simoom are trivial and ineffective? All in the immediate vicinity of the ship is the blackness of eternal night, and a chaos of foamless water; but, about a league on either side of us, may be seen, indistinctly and at intervals, stupendous ramparts of ice, towering away into the desolate sky, and looking like the walls of the universe. . . .

As I imagined, the ship proves to be in a current; if that appellation can properly be given to a tide which, howling and shrieking by the white ice, thunders on to the southward with a velocity like the headlong dashing of a cataract.

To conceive the horror of my sensations is, I presume, utterly impossible; yet a curiosity to penetrate the mysteries of these awful regions, predominates even over my despair, and will reconcile me to the most hideous aspect of death. It is evident that we are hurrying onwards to some exciting knowledge—some never-to-be-imparted secret, whose attainment is destruction. Perhaps this current leads us to the southern pole itself. It must be confessed that a supposition apparently so wild has every probability in its favor. . . .

The crew pace the deck with unquiet and tremulous step; but there is upon their countenances an expression more of the eagerness of hope than of the apathy of despair.

In the meantime the wind is still in our poop, and, as we carry a crowd of canvas, the ship is at times lifted bodily from out the sea—Oh, horror upon horror! the ice opens suddenly to the right, and to the left, and we are whirling dizzily, in immense concentric circles, round and round the borders of a gigantic amphitheatre, the summit of whose walls is lost in the darkness and the distance. But little time will be left me to ponder upon my destiny—the circles rapidly grow small—we are plunging madly within the grasp of the whirlpool—and amid a roaring, and bellowing, and thundering of ocean and of tempest, the ship is quivering, oh God! and—going down.

NOTE.—The "MS. Found in a Bottle" was originally published in 1833, and it was not until many years afterwards that I became acquainted with the maps of Mercator, in which the ocean is represented as rushing, by four mouths, into the (northern) Polar Gulf, to be absorbed into the bowels of the earth; the Pole itself being represented by a black rock, towering to a prodigious height.

THE END.

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

There Is No Thought of Discontinuing the Questionnaire in AMAZING STORIES

Editor, AMAZING STORIES:

I have been reading your magazine faithfully for a few years past.

I see, now, that there is something very important missing. It is the questionnaire, entitled: "What Do You Know?" Let me tell you how I happened to start reading AMAZING STORIES, and you will see why that questionnaire is necessary: Being a Frenchman, the only fiction stories I ever read were those of Jules Verne. So, incidentally, I happened to learn English. It was then that I saw, a number of AMAZING STORIES open as advertisement at the page where it shows that "What Do You Know?" I found out then, that these questions had no answer in my young head. So I have been reading AMAZING STORIES ever since.

Now, let me tell you that your magazine is the best of its kind in the world. I can read six languages and I am receiving reading matter from all over the world, and none of the others can be compared with AMAZING STORIES. Your authors are all (except a very very few) of the most interesting writers and their style is always very fascinating. In one word anyone who likes to learn something will always keep reading AMAZING STORIES when he is acquainted with it.

Wishing you sir, the best of success.

ALFRED MAUD,
Neuville, Comte de Portneuf,
Quebec, Canada.

(We have not the least idea of discontinuing the Questionnaire. We have, to a certain extent, settled upon an approximate number of twenty questions for it and wish to have it as much a feature of AMAZING STORIES as are the Discussions. We feel that AMAZING STORIES in developing the Discussions and in adhering to the Questionnaire, which has only been omitted once in many years, is doing its most characteristic work. AMAZING STORIES is now being printed in Canada so you can get it at a reasonable price.—EDITOR.)

An Encouraging Letter with Suggestions

Editor, AMAZING STORIES:

About the new AMAZING STORIES.—It's excellent. Small size, more pages and stories and a reprint. I'd never believe it. Am glad to see "Skylark" and "Red Dust" to be reprinted but they are easy to be had. Let us have older stories, like "The Darkness and the Dawn" series, "War in the Air" by George Allen England, "Sea Demon" by Victor Rousseau, "Blind Spot" by Flint & Hall and other old tales published before 1920.

Whoops for "Triplanetary" . . . only one plea . . . Let Paul or Wesso illustrate. Must say though, that the current issue cover is the best Morey has ever done. Congratulations.

I know AMAZING STORIES are on the upgrade now. Keep it up, I'm with you.

DANIEL MCPHAIL,
110 S. W. 26th Street,
Oklahoma City, Oklahoma.

(This letter can speak for itself.—We publish it to show that there is a feeling abroad that AMAZING STORIES is emulating "Old Man River," it keeps on "rolling along."—EDITOR.)

Oh, Dear—We'll Have to Stand It

Editor, AMAZING STORIES:

I have examined a copy of the latest issue of your magazine, and note with deep regret the many signs of its retrogression from the high standards set earlier in the year. AMAZING STORIES for a time occupied the position of a bright pinnacle rising from the slough of the average run of magazine fiction; but now the pinnacle is toppled, the mighty hath fallen, the idol displayeth feet of clay: in the words of one of the stories in your current issue, the Washington Monument has been stolen.

You have abruptly and without warning abandoned the new cover, which was the most striking innovation made by any science fiction magazine since the inception of that form of literature in America. You have repudiated the old size, destroyed the former dignified format, and degraded the publication downward to the mediocrity of the ordinary pulp paper horror. For what reasons?

I was among the many hundreds of your old readers who must have rushed to applaud and give thanks for the new cover; on publishing my letter, you remarked that the majority of those commenting with regard to the change had cheered the novelty, and that the new cover was now pretty well established. Now that beautiful innovation has been abandoned, you have gone back to the lurid blarings of former days. Once again many puzzled readers, bewildered subscribers who have stuck with you through thick and thin, through Hoover prosperity and the New Deal, must furtively sidle up to their newsdealers and ask in hoarse, ashamed voices for their copies of AMAZING STORIES.

I am not writing this letter with any intention of upbraiding you, but only with the hope of helpfulness in my heart. You have said to us, your readers: "This is your magazine. We will make it what you want it to be." I truly believe your sincere wish and constant striving is for a slow but steady improvement in the status of AMAZING STORIES. But I want to tell you that I think, and many others will agree with me, that you have made a very grave mistake in changing the size and mutilating the cover. One of your competitors did the same thing a year or two ago, and has never recovered the loss of prestige incurred, though subsequently forced by its readers to acknowledge the error. I am inclined to predict that will be the case with AMAZING STORIES. Popular demand will cry out for a return to the better days of old.

Now I'd like to comment on one or two other things. First, Mr. Brandt's very interesting book notices. In most instances I agree with him heartily in his critical judgment, but in reviewing "Man's Mortality" by Michael Arlen, he has badly fallen down. "Man's Mortality" is a magnificent book, top ranking 99% of the science fiction annually published in America, and taking its place on the seven hills of imaginative literature with Merritt's "Moon Pool," Smith's "Skylark," and Well's "War of the Worlds," which are among the best ten stories of scientific fiction yet to see the light. Readers, don't be frightened away by Mr. Brandt's discouraging comment. You'll find "Man's Mortality" a marvelous piece of work; better written by far than "When Worlds Collide," which is just a hack story of the old creaking formula, world-endangered-by-approaching planet-league-of-scientists-formed-to-seek-salvation-for-earth: I agree with you, Mr. Brandt, it will make a swell yarn for the movies. There is the usual triangle, the inevitable love sick couple, the old hokum about a new Adam and Eve starting over on another world. Ad infinitum, ad nauseam. "Man's Mortality" is different. The people who walk Michael Arlen's pages are real; they breathe, they live and love and curse and pray and sweat and die. They are human beings made of flesh and blood, not outlines cut out from a machine's mold, and stamped with the metallic imprint of the formula. More power to Michael Arlen! With one book of science fiction, he takes a giant stride forward, to a place in fantasy's hall of immortals, with Merritt and Wells and Serviss.

Now for the last thing I want to get off my chest. Thank heaven you've abandoned those juvenile subheadings. They gave repeated gratuitous insults to the intelligence of your readers. But you have gone them one better in your comment on "The Theft of the Washington Monument." In your editorial squib you give a complete synopsis of the whole story—so why should anyone bother to read it? As for myself, I did bother to read it, but the effect was ruined because I knew everything that was going to come before it happened. Perhaps you were giving us a little time-traveling yourself?

But here's to AMAZING STORIES, and to you, Mr. Editor! You make mistakes, you're only human, you can't please everybody, but all in all you manage, as the British say, to muddle through. Somehow you are able to turn out a pretty darn good magazine every month. And let me whisper this information in your ear: if you decide to print A. S. every month on purple paper, in a magazine three inches wide and twelve feet length, with illustrations by Leonardo Da Vinci, I'll still read it, so long as you concede us one thing: always print *Amazing* Stories.

Here's my vote on the reprint question: Forget about them. The two or three you have lately used have only served to illustrate the fact that science fiction has come a long distance since the days of the old timers. And do you want your present, living authors to starve to death for lack of markets?

Don't reprint the "Skylark of Space." Tell Smith to get busy on something new. It will be interesting to watch him try to exceed himself, if that can be done.

Frank K. Kelly,
2912 Charlotte,
Kansas City, Mo.

(We are going to let this long letter speak for itself and it certainly is doing it in great style. But we want to get something off our mind also. We would like you to give us your unbiased opinion, as soon as possible, on a story which appeared in the December issue, entitled "Into the Meteorite Orbit."—EDITOR.)

Comments on the October Issue of AMAZING STORIES

Editor, AMAZING STORIES:

The October issue of A. S. was the best one you've published this year.

"Into the Hydrosphere" took first prize, please continue the Jameson series, Mr. Jones. The other stories follow in order of merit.

"The Men Without Shadows," by Stanton A. Coblentz who is remembered for his fine work in "The Sunken World."

"Theft of the Washington Monument," by Robert Arthur, Jr., this was his first tale for A. S., but it certainly was a masterpiece.

"When the Universe Shrank," by J. Lewis Burtt. I can hardly wait for the next issue.

"The Tree Terror," by Dr. Keller was a honey but I don't believe that any story that he has written can beat "The Revolt of the Pedestrains."

"The Diamond Lens," by Fitz-James O'Brien was a swell short story.

"The Superman," by David Speaker wasn't so good.

Morey is "all x," the new type of cover gives a new air to the mag.

Give us more yarns from the following authors:

Leslie F. Stone, Clare Unger Harris (the weaker sex can sure write good stories), George McLociard, A. F. Starzl, G. Peyton Wertenbaker, Robert A. Wait, P. Schuyler Miller and the Kline brothers.

I wish that you could publish one of Jack Williamson's yarns in every issue. He's an author that can't be beaten. His best story is "The Stone From the Green Star," although "The Green Girl" nearly surpasses it.

When are you going to reprint the "Skylark" stories? How about the "Moon Pool" when you finish the "Skylark?"

Here's hoping you'll never change back to the large size.

Edward Canielle,
R. F. D. No. 7, Erie, Pa.

(After the many scoldings which we have received, this letter is certainly a comfort. We hope that your letter will be attentively considered by the writers of Discussions. We are somewhat uncertain about the "Skylark" stories. What you say about the small size magazine certainly coincides with the views of the writers.—EDITOR.)

A Letter Suggesting an English Edition of AMAZING STORIES

Editor, AMAZING STORIES:

Why do you not bring out a special edition of your magazine in England? AMAZING STORIES is very popular in England, a fact which is proved by the number of letters from English readers in these columns.

I am aware that various other American magazines, and excellent publications in their way, have started English editions and dropped them after a few issues, but I firmly believe that AMAZING STORIES would have a different experience. My reasons for thinking so are, firstly, that science fiction is international: Gangster Stories and Wild West Stories are not: secondly, that the general style of your magazine and the stories therein is nearer to what an Englishman is accustomed to than that of other mags, which, apart altogether from the slang which the average Englishman will *not* have, in striving to be sensational become jerky. You know what I mean, those short, clipped sentences that destroy all an Englishman's pleasure in a story and make him think he is reading a foreign language.

What of it brother Britons? I want to see science fiction established in England, sold on every bookstall. (Newsstand.) Do you?

Festus Pragnell,
Southampton, England.

(We have recently arranged for the publication of a Canadian AMAZING STORIES and your suggestion about an English edition we will submit to the proper official. AMAZING STORIES feels that it cannot have anything that is too good, that is to say, we want to give a very high grade of literature and avoid precisely the things which you say an Englishman will not have. Without trying specifically to carry out this idea, we felt that AMAZING STORIES is not a sinner in the way you describe and it is interesting to notice that from England and the Colonies we always get favorable letters of comment—the scoldings come from nearer home.—EDITOR.)

A Very Interesting Bit of Criticism from a Very Attentive Reader

Editor, AMAZING STORIES:

Now you *are* getting 'Amazing.' Seven years of fair constancy, at times good, at times bad, with a fine recent improvement in covers, but some suspicious stories, and now "this."

Being close to criticism, I have heard, 'AMAZING' has treated fans atrociously. I haven't read the stories yet, but if they match the cover, they'll be terrible. And the new size. . . !" That's one reaction. The writer had especial cause for disappointment, being that she binds her issues. That does spoil things.

As far as I'm concerned, I don't particularly like the change either. It's funny, coming right on top of all the promises. But I guess it's better to have some magazine than none at all, if that was your situation.

Going back an issue—first time you ever combined numbers! History is being made rapidly. I liked Leo Morey's cover very much. The colors were peculiar and "other-worldish," and the figures of the two men in oxygen masks were done just right. Following the cover, the story from which it was taken was good: "The Meteor-Man of Plaa." "Essence of Life" I enjoyed, and "Silicon Empire" to a slightly lesser degree. The rest of the stories were pretty punk. I mean, after all the title *is* AMAZING STORIES. Now read "Head Hunters Fooled and Foiled." I like that; it was a foolish little thing; but it did not make my eyes pop out. Walter Kateley's "Children of the Great Magma" I enjoyed until the explorers found the inevitable Lost People. For that reason, I don't want to read any more polar stories for a long time. They leave me "cold!" Mr. Kateley's QUARTERLY yarn, "Insects Extraordinary," though now a year or so old, was a novelet, of a type of which I would appreciate his writing more. Very different and interesting.

QUARTERLY has brought something to my mind. Yes, you know: where is it? Has been about eight months now. If you've discontinued publication, please why keep it a secret? I hate to keep pestering the news agents. They don't know, anyway.

Now, the October number. An adequate cover. Morey has very well pictured the "Men With No Shadows." And there's a story you can be proud of! a story that makes it worth while half-reading through some other poor ones. Yes, an excellent story, "The Men Without Shadows," and an excellent illustration by Leo Morey. "The Theft of the Washington Monument" a readable short, with another fine job by Morey. Hold your breath and continue to "When the Universe Shrank": the issue is still unspoiled. J. Lewis Burtt could well have made this a novel, I'm sure; but it is fine so far as a two-part serial. I mention its novel possibilities, because it at once suggests itself to my mind that this shrinking of the earth would give rise to many more interesting situations than that alone of the lack of food, which Mr. Burtt uses as his theme. How, for instance —well, all buildings would have to be torn down. A (relative to shrinking earth) big, bulky twelve-foot man can't get around in a house built for one of half his proportions. Surely no one could slide into one of the low, streamlined automobiles. Imagine trying to play a piano (for example and music must go on) with fingers, each covering three keys! Etc.

"The Tree Terror" is indeed, as you say, "A Kelleresque flight of fancy." More flights to the famous Dr.!—Dr. Keller, you're just about the best thing out!—I don't know what would happen if he and Stanton A. Coblentz should collaborate! But they're great enough by themselves.

Didn't care for "Into the Hydrosphere." It read like an Edmond Hamilton story, but without Ed's style. However, an author-fan wrote me, "That Dr. Jameson story in the current Amazing Stories is a 'darb.'" So what. . . .

As for The Superman," I hope I *never* run across another of these same old diary stories.

I think this is *only* about the fifth time I've run across "The Diamond Lens" in a science-fiction magazine. But it's a grand little yarn. I like that type, i.e. "Girl in the Golden Atom," "Into the Green Prism," etc.

Imagine we'll all be writing about "Triplanetary," "Through the Andes," and several other of those stories you list. They sound good. "Battery of Hate" is an interesting title. I feel like saying "intriguing title, but my! after discovering your pet peeves to be "scientifiction" and "intriguing" . . ! May I refer you, however, to your own Fall 1930 Quarterly? Its cover: "Scientifiction Stories by": Personally, I like "scientifiction" . . .

Incidentally, reviewing this Fall '30 Quarterly, I notice the name of Aladra Septama, an author who has disappeared. He should reappear. It would be good to see his stories in your pages again.

Forrest J. Ackerman,
530 Staples Avenue,
San Francisco, Cal.

(You say we are getting "Amazing"—that may be, but we are on the point of getting amazed at the curious criticisms which we are receiving and which vary in an astonishing degree, one from the other. The Quarterly is now on the newsstands. We can only hope that Mr. Septama will read this letter or, at least the last few lines to learn of his disappearance. What does the word 'darb' mean?—Editor.)

The Small Format Objected to by One Reader
Editor, Amazing Stories:

I have noticed with deep regret that you have changed the size of Amazing. It seems to me that after eight and one half years of prosperity on Amazing's part, such a change would be deemed inadvisable.

However, I believe you know what you are doing, but please remember the failures others have made in such a change. And above all, I sincerely hope that Amazing will not follow in its footsteps and print in the "library" size for a whole year. But nevertheless, I am confident that "Good ol' Amazing" will return eventually to the more dignified nine by twelve size.

One naturally classifies a small size magazine with the common pulp that clutters the newsstands so to-day.

I am proud of my complete collection of Amazing, and this small size seems to detract from the appearance of the whole set. When bound this small size will also make the collection uneven.

Otherwise the magazine is as nearly perfect as could be possibly wanted. You always get 'the cream of the crop', and that is what we want.

In closing I want to apologize if I have been too severe, but all of my remarks have been only in the interest of Amazing Stories.

Louis F. Torrance,
Winfield, Kansas.

(We wish you would read some of the letters commending the change of format. We do not mind severity, although we cannot agree with you in thinking that it is a change for the worst. The library format certainly gives the book more convenient size and our hopes are just as strong as our intentions are. Good intentions without a backing of hope are of little value.—Editor.)

**Copies of Amazing Stories for Sale—
Correspondents in Science Wanted**
Editor, Amazing Stories:

To Those Whom It May Concern—I have on hand a complete file of the Amazing Stories magazine from August 1927 to August 1933—a six-year period—which circumstances compel me to dispose of, and which I will gladly sell collectively or in groups of yearly issues to those sending me the highest offers. Also I would like to get into correspondence with some individual interested in science—Chemistry, Biology, Astronomy, Physics, etc.—and Science Fiction.

Louis W. Clark,
Norman, Oklahoma,
Masonic Dormitory.

A Very Pleasant Word from a Reader—The Jules Verne Picture

Editor, AMAZING STORIES:

I have enjoyed AMAZING STORIES so much. It doesn't come out often enough. I should like to buy back numbers of science fiction; are they obtainable?

A letter in the July issue suggests that you enlarge the Jules Verne picture. I think this is an excellent idea. Why don't you do it? I could frame it and hang it on the wall, and then my friends would comment upon it and I'd have no trouble introducing the topic of science fiction. There are a lot of people who have never heard of AMAZING STORIES—but I'm telling them what they are missing.

M. Stanbery,
1523 Harmony Street,
New Orleans, La.

(You must realize that the smaller format of AMAZING STORIES operated to crowd out the Jules Verne picture, but we will keep in mind what you say and will try to have some system of reproducing it before many numbers have appeared. While there are naturally many people who have never heard of AMAZING STORIES, we feel that we have an unusual number of warm friends.—EDITOR.)

A Letter Including Some Inaccuracies—Who Is T. O'Connor?—Reprints Objected To—Early Issues and Reprints

Editor, AMAZING STORIES:

'We will never have reprints,' 'We will never reduce our size,' 'we will never go bimonthly,' 'The Quarterly is only being redated to correspond with the dates of issue, it will still be a quarterly,' and other similar statement have been made in the editor's comments to various letters printed in the 'Discussions'.

And then the Quarterly went semi-annual and now seems to be gone forever. And now the Monthly has had a bimonthly and has taken reducing treatments. And it has a reprint which has been reprinted too many times before. Merely the suggestion of reprints which was made three months ago was bad enough, but here they are and along with them a publicity campaign of selected letters asking for reprints. If you *must* have reprints use stories which have never appeared in the science fiction or weird stories magazines.

When Clifton Amsbury was told the magazine had reduced its size and had a reprint, he couldn't believe it. 'What!' he said, 'When did T. O'Connor die?' But no, the name on the editorial page was still that of the former guardian of the best tradition of science fiction. There was also a notice that this new policy was made at a greater expense and so on and so on. We know that this is a tough time for magazines and that using stories for which you already have acquired the rights is cheaper than buying new ones and that the small size is cheaper than the large, and we being loyal science fiction fans sympathize with you and pledge our continued support in spite of our disappointment with the great 'surprise' we had to wait two months for. In fact one of us even likes the new size, but PLEASE cut the edges smooth.

Golden Gate Scientific Association,
Lester Anderson, Secretary.
Clifton Amsbury, Secretary, I. S. A.
A. M. MacDermott,
Editor, Cosmology, I. S. A.
President, G.G.S.A.
Fred Anger.

(This is a curious letter. We wish the writer in order to see how AMAZING STORIES started in the matter of reprints would run over some of our earlier numbers which contained, it is fair to say, comparatively little except reprints—some complete and some continued reprint stories, perhaps four or five to a number. As for reduction of size, we may say we have taken a step to graduating into the class of such magazines as the "Atlantic Monthly." You say the Quarterly seems to have gone forever. It certainly has not. Your objection to reprints has induced you to make an incorrect statement. There has been no publicity campaign of selected letters. If there had been such, this letter would not fit in with it. We do not understand what the death of T. O'Connor could have to do with AMAZING STORIES. There is no such name as that on our staff and never has been. We can inform Mr. Amsbury that the old time AMAZING STORIES contained any number of reprints.—EDITOR.)

Comments on the October Issue of AMAZING STORIES—Back Numbers for Sale

Editor, AMAZING STORIES:

Wish to comment on October issue of AMAZING STORIES. Besides the improvement in size, I particularly like the Book Section—In the Realm of Books, by C. A. Brandt. Brandt is a great science fiction critic. I admire his judgment of science fiction.

The October issue had a wonderful set up of stories—stories by well known science fiction authors. May the future issues of AMAZING STORIES carry on the high standard set by this issue. "The Diamond Lens," by Fitz-James O'Brien I had read somewhere before. I think it was in an early issue of AMAZING STORIES. I enjoyed reading it again.

I was overjoyed to read in Brandt's column that "When Worlds Collide" is to be shown on the screen. I had the pleasure of seeing "Deluge" on the screen the other day, and enjoyed it. May we have more science fiction pictures.

I have been reading AMAZING STORIES since its earliest isues, and I wish to say that the October, 1933, issue is the first issue, for many years, which approaches in real science fiction entertainment value, the mark set by those early issues. In fact, I believe the current issue rises above that mark.

I have noticed, often, in the discussions column, science fiction fans asking for back numbers. I have a number of science fiction magazines, AMAZING STORIES and others, collected over a period of years, which I am willing to mail to anyone for below cost prices. Will mail list of science books and magazines in my possession to anyone interested.

Keep up the good work.

Peter Germano,
6 Wall Street,
New Bedford, Mass.

(Mr. Brandt is an absolute authority on science fiction. He has given much of his time to it for many years and he has an astonishing familiarity with the literature of it. "The Diamond Lens," to which you allude, was written many years ago. The author wrote but a few stories, but "The Diamond Lens" today is considered an absolute classic, so much so that a very high priced illustrated edition with some other work of O'Brien has been published within a few months.—EDITOR.)

A Letter from the Irish Free State
Editor, AMAZING STORIES:

Congratulations on bringing AMAZING STORIES right bang up in front! Those covers by Sigmond turned the scale in favor of AMAZING STORIES, and how! The pan of said scales nearly bust the floor. Those covers which have attired A. S. since January are just superb. Don't lose Sigmond whatever you have to do. All my pals to whom I loan my A. S. issues are commenting upon the magnificent covers and, no doubt, thousands of new readers everywhere are commenting in like manner. The stories, too, of late, have generally gone ahead, and here is a list from the March and April issues in the order in which they appealed to me:

(1) "Beyond the End of Space." Great scientific stuff, smacking reminiscently of "Skylark of Space," though of course, away behind that magnificent chronicle.

(2) "Stellarite." Close second. Good interplanetary yarn.

(3) "When the Comet Returned." Fine.

(4) "The Phantom of Terror." Enthralling.

(5) "The Tomb of Time." Gripping, but marred by my old aversion, love-interest.

(6) "In the Scarlet Star." Well written thriller.

(7) "The Memory Stream." Graphic, interesting tale.

(8) "Flame Worms of Yokku." Science plus action.

(9) "Ancients of Easter Island." Black magic mars this.

(10) "Universal Merry-go-round," somewhat error-laden, but quite interesting.

I have been looking forward to seeing some more of Dr. Jameson and the Zoromes of Zor. Tell the author to get them going again, and to make it snappy. The adventures of Dr. Jamieson and the Zoromes of Zor were among the best stories you ever had. Also sound Dr. Smith on the possibility of more "Skylark" tales. He has had long enough now to write up a smasher, so what about it?

Keep up the present standard and you have nothing to worry about!

Best wishes,
Fitz-Gerald P. Grattan,
11 Frankfield Terrace,
Summerhill South,
Cork, I. F. S.

(There are several more Jameson stories in our hands which will soon be published. The first ones have been very much appreciated and we are also, as you observe, running a continued story by Dr. Smith. We think you will find the tale by Dr. Smith to be what you call "A smasher." We are always especially interested in getting letters from foreign countries, but we have received comparatively few from the Irish Free State. Your signature shows that you have a very distinguished name.—Editor.)

Two Readers Join in Commendation—They Ask "Which Is the Best Science Fiction Story?"
Editor, AMAZING STORIES:

We have just finished the July issue of "our" magazine. In comparing this issue with that of the April, it is hard to believe that the two were edited by the same editor.

The stories were excellent, containing just enough science to be readily grasped by the ordinary reader. As usual Dr. Keller presented us with one of his excellent "human interest" stories. "The Intelligence Gigantic" was good, but we can't for the life of us figure out how the Martians created matter out of thought. It really sounded like a fairy tale, being too intangible even to grasp.

In "Hibernation," by Abner J. Gelula, Dr. Anderson is able to counteract the sudden drop in blood sugar content by administering sugar to himself. This is not true, for a sudden decided lowering of the blood sugar renders the individual too convulsive to be capable of any muscular coordination.

We would like to get your opinion on two questions: First: What is considered the best science fiction story ever written? Second: Which is better, the "Skylark of Space" or the "Moon Pool"?

In the "Science Fiction Digest" it was stated that you were going to print a story called

"Gold." Is this true? We are anxiously awaiting this story because the title of it sounds good.

And in closing we state that unlike the proverbial Greeks, we ask you not to question the gifts of praise we bring for the July edition.

Best wishes for the future of "our" magazine.

William Brickmann,
Julius Tralins,
2327 W. North Avenue,
Baltimore, Maryland.

(The taking of sugar by the mouth to overcome a drop in the blood contents of sugar is the salvation and probably in some cases, the preservation of the life of diabetes patients. "The Skylark of Space" deals with interplanetary travel and without undue rashness, we may say that we doubt if it will ever be accomplished, so to a degree it is what the children call a "fairy story." "The Moon Pool," which is terrestrial, is absolutely an imaginary story throwing cold facts to the wind and making a really beautiful picture of a sort of fairyland. Yet, Mr. Merritt has got a lot of human nature into the "Moon Pool," and the writer was greatly impressed by the character of the Irishman. You have already seen in the preceding issue the story "Gold." We thank you for your expressions of good will and friendship for AMAZING STORIES.—EDITOR.)

An Oldtime Reader Feels that A. S. Is Losing Its Hold Upon Him

Editor, AMAZING STORIES:

I note from recent copies of AMAZING STORIES in the "Discussion Column," that quite a few readers send in requests for back numbers.

I, myself, have sent in a letter for the same request, and have succeeded in buying the copies I needed. Having read them thoroughly, I am now ready to pass them on to other readers at one-half of what they cost me. My files consist of copies from 1926, 1927, 1928 and a complete file of 1932-33 copies. Practically all the Quarterlies are in my files and these I can let go too, at half or less what they cost me.

If the readers also want other magazines of the scientific-mechanical kind, I have numerous copies of Everyday Science and Mechanics, Modern Mechanics, Flying Manuals, Manuals of Radio Telegraphy, etc., which they can buy very cheaply from me.

If you can print this in your Discussions Columns soon, I will greatly appreciate it, and I know that other fellow readers will, too.

This letter is not intended for back-slapping you, nor as a brick-bat, but, frankly, AMAZING STORIES does not appeal to me as much now as it did before. I don't know the cause for this change, but it was so imperceptible, that it has just dawned on me that the magazine, once my favorite, seems to be waning in its qualities. The covers, inside drawings, and some, but not all, of the stories are distinctly distasteful to me. It used to fascinate me, but now I read it just for the heck of it. This fascination accounts for my files, some of my issues of which are over four years old. I used to throw away the magazine and save the cover, the result is that I have over 120 covers of AMAZING STORIES and various others.

Right now, if the magazine suits others, it suits me, and the fact that I still read it, and still save my copies shows that I still have faith in "our" magazine for bigger and better issues.

Hoping to see this letter in print soon, so others can get a taste of the magazine, "as it was," and giving you my wishes for a long ilfe, I remain,

Wm. G. Dukstein,
2486 W. 40th,
Cleveland, Ohio.

(We are sure your letter will be appreciated by some of our readers who are anxious to fill up their files. It might be illuminating for you to look at the first isues of AMAZING STORIES and see how poor they were compared to what we are giving now. It may be said that it started as a re-print magazine and the quality of its matter as it now appears, we think, can be testified to by the names of the authors. It would be hard to get together a staff of writers equal to those who favor us with their work, of writers in the line of science fiction. We do not want to lose old time readers and we know within our inner consciousness that we are giving good matter in our pages. However, the last clause of your letter tells us that you are still our friend.—EDITOR.)

A Letter from a Representative of the International Science Club

Editor, AMAZING STORIES:

I received the new size AMAZING STORIES with a little surprise, but the change doesn't affect me in the least so I do not have any criticisms to make. I would rather have you adopt one style and maintain it because I do not like a constant change in size.

One thing the new issue brings to my mind and that is reprints. The subject of reprints has been discussed so many times before that it is needless to go over the same thing again, but there are a few points regarding this topic that I would like to bring out. Since we readers of AMAZING STORIES have read such stories as "The Diamond Lens" between our covers once before, we do not care to have such stories taking up magazine space again. For this reason, I do not care to see a reprint of "Skylarks of Space." Although the "Skylark" stories are very well liked by the readers, why reprint them when they can buy the original magazines in which these stories appeared? I, myself, have two sets of the "Skylark of Space" which I shall sell to readers who want them. You can see from the thread of my arguments that I am against reprinting stories which have formerly appeared in AMAZING STORIES.

Most of the readers want reprints, but of course if you give them the wrong kind, they are going to go back on them. Countless times I have witnessed letters appearing in "Discussions" in which the readers present their choice of reprints. There are several stories which appear in almost all of these lists and yet when we are given reprints, these stories are never among them.

In all fairness to the editor, I ought to give reasons why he might not be able to secure these stories for us. I know that the magazine business is none to good, therefore the expenses must be watched carefully. Reprints such as I have named are copyrighted and in order to secure them for publication often costs more than the original stories.

In reprinting stories like "Skylarks of Space" the stories have already been purchased and are owned by the magazine, therefore it is cheaper to publish these stories. If by doing this, the magazine is put on a better financial basis, I, for one, am willing to see you do it because I know that when the magazine industry returns to normal, we get the best it is possible to buy. I know we have in the past. I would rather have AMAZING STORIES with all reprints from earlier issues than no AMAZING STORIES. I hope the readers understand the really trying times the editors must be under in even being able to give us such a fine magazine every month. Therefore readers, instead of criticizing the new size and the inability of the editor to do impossible things, just think of his job.

The International Cosmos Science Club still welcomes inquiries concerning membership from readers who are interested. I. C. S. C. is doing its best to spread the doctrine of science and science fiction among the people.

From one who appreciates AMAZING STORIES,
Edward F. Gervais,
512 South Pennsylvania Ave.,
Lansing, Michigan.

(What you say about reprints from our former issues would be perfectly true except that these issues are extremely hard to get, or at least from our correspondence, it would appear that our readers have difficulty in procuring them. Although when the AMAZING STORIES began, it was distinctively a reprint magazine, it has lost that character at last but we occasionally give a classic, such as "The Diamond Lens" or some of Poe's or perhaps O. Henry's stories which we may be sure that many of our readers have not read. We hope you will keep on appreciating us as expressed in the closing sentence of your letter.—EDITOR.)

A Letter About Dreams

Editor, AMAZING STORIES:

I don't suppose that it's your fault that the size of the magazine has changed so I won't bawl you out—just the magazine. Perhaps you'll get back to normal after awhile. One can see that most of the stories are better but most lack that old, mysterious air. Do you notice it? Maybe it's just the way some old things (not ideas, thank goodness!) make one feel. Did you ever notice how well you like certain old tunes, you haven't heard for a while, not too old, not too new, mostly popular and semi-classical songs? Can you explain this?

One thing everybody has left out. The paper the magazine is printed on has a pleasing odor, what? I have smelled it so much, an AMAZING magazine would not be an AMAZING magazine without it. It is so closely associated, see? Never thought of it before?

"Omega, the Man" was up to, if not over the standard, of most science-fiction stories. And by the way, why not raise the price? You've joined the N. R. A., I think we're rich enough, and perhaps you could get better stuff for your ardent admirers, what?

We think you've got almost enough science and anyway you've stirred up the wish of flying through space, in several friends of mine. It might have been there already but these stories unearthed it.

Several stories have hinted of others and for the insulted, perhaps, I have a word of consolation. Did the critics ever hear that great minds run in the same line? Edison was not the only man working independently upon the incandescent light. Fulton was not the only steamboat builder; Rumsey was one, etc. And the men that invented Non-Euclidean Geometry were working independently in other countries. And then there's the subconscious mind. It may remember what the conscious one may not. (I use subconscious in the same way scientists use ether in pertaining to what radio waves, meteors, etc., travel through.) Someone else's writing may creep up and the person thinks it is his own. This has been true in many cases. My own, and several poets I have read. And there's nothing new under the sun!! Sez me!! And these wise old sages of long ago before they began giving them the razzberries.

By the way, slang is expressive, isn't it? But not wishing to start (?) an argument I'll only say, "Some of the pest people do it."

I read recently about some strange dreams of the human race(?). I have had strange dreams and this is only one of them. I dreamed that I was lost in a certain part of this state, a part that I had never seen before, and yet it seemed familiar. I dreamed that several years ago and did not think of it again until this year when I came upon that very place! Yes! This experience I have had many times and the strangest is this: I dreamed I was in a prehistoric forest (rather like that amber beetle story, what?) and something strange and unknown was chasing me. It was very close to me when I began to near civilization, but I began to have a hard time running (not uncommon in dreams) and then—, I awoke. Disillusioning?

Two or three weeks later I went to "King Kong," that weird masterpiece, and there I saw the very forest that I had been in in my dreams, but the hero of the story took my part. He neared civilization as you know, and got through the gates. O gee! Maybe you didn't see "King Kong." But get somebody that did, and then would you please try to explain my dream?

K. Armstrong,
814 College Ave.,
Morgantown,
West Virginia.

(There is no advantage in being puzzled about things that we encounter and experience in our lives in the line of subconsciousness. Dreams are a profound mystery. There are many dreams which never have any meaning so those, which seem to lead somewhere, should be treated as absolute coincidences. Yet there is a limitation to this for they are the production of thought and thought in he subconscious world of dreams may well sometimes be correct. You had better treat anything like dreams' fulfillment as a coincidence for undoubtedly that is all it is. It is absurd to say that they have any importance.—EDITOR.)

A Tribute to Mr. Kostkos

Editor, AMAZING STORIES:

In your August-September issue I read with particular enjoyment "The Meteor-Man of Plaa" by your new author, Henry Kostkos. I thought this story written in a gripping style that mastered the difficult, imaginary problems most effectively.

It seems to me you have made a real discovery in Mr. Kostkos, and I look forward to the opportunity to enjoy him again in future issues.

Herbert W. Foster,
31 Plymouth Road,
Rockville Centre, N. Y.

(We are hoping for more of Mr. Kostkos' work and we really feel that we have made, as you put it, a real discovery in this writer. You will soon see more of his work.—EDITOR.)

Jack Winks and Henry Kostkos Highly Commended

Editor, AMAZING STORIES:

I have been a constant reader of AMAZING STORIES ever since its beginning and I am sure that I am qualified to state that your combined August-September number ranks with the finest issues you have ever put out.

It contained a remarkably diverse and entertaining bunch of stories, ranging through interplanetary, time-traveling and other types of science fiction.

Even though some of the stories were by newcomers to AMAZING STORIES, they compared very favorably with the work of writers well established in the field of Science Fiction. Great promise was shown by both writers.

Herbert Smith,
2791 Grand Concourse,
Bronx, N. Y. C.

(There is no doubt that AMAZING STORIES is not only discovering good authors, but is holding them. The Questionnaire, which we publish, tells the story of the science contained in the magazine to this extent, yet it covers only a part of what is to be found in is pages. So you will see that after all our authors do use science in their narrations.—EDITOR.)

Baron Munchausen's Jump Through the Moon

Editor, AMAZING STORIES:

I have just finished reading the January issue of AMAZING STORIES and I thought they were all good except Mr. Skidmore's story, "Adventures of Posi and Nega," which repeated too much over his story in an earlier issue. I think Edward E. Smith's "Triplanetary," *was the best in this issue by far.* From what I think this will equal—if not surpass, all of his earlier stories. In the November issue I liked the story, "The Beetle in the Amber," THE BEST. The one I did not like was "When the Universe Shrank."

In your January Editorial you mentioned Baron Munchausen jumping through the earth; if I am not mistaken, he jumped through the moon—not the earth.

This is the first letter I've sent to your magazine although I've read it as far back as I can remember, even though I am only sixteen. Am sorry this is such a short letter but will try to do better next time.

JOHN H. FARRER,
St. Elmo Hotel,
Chautauqua, N. Y.

(The only comfort we have about Baron Munchausen is that he never jumped through either earth or moon. The author's description of what happened to him when he jumped elicited considerable discussion and denial of the accuracy from the scientific standpoint. Your note on the "Beetle in the Amber" follows out the Editor's idea, yet we have another correspondent who dislikes it.—EDITOR.)

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